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2
3 IN THE UNITED STATES DISTRICT COURT
4 FOR THE SOUTHERN DISTRICT OF TEXAS
5 HOUSTON DIVISION

6 MRS. SAMUEL E. ALLGOOD,
7 Individually and as Independent
8 Executrix of the Estate of
9 Samuel E. Allgood; MARCUS
10 ALLGOOD; and MALCOLM ALLGOOD

11 VS.

12 R.J. REYNOLDS TOBACCO COMPANY;
13 THE AMERICAN TOBACCO COMPANY;
14 THE TOBACCO INSTITUTE, INC.,;
15 and THE COUNCIL FOR TOBACCO
16 RESEARCH-U.S.A., INC.

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* CIVIL ACTION
* No. H-91-0158
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A P P E A R A N C E S O F C O U N S E L

FOR PLAINTIFFS MRS. SAMUEL E. ALLGOOD,
Individually and as Independent Executrix of the
Estate of Samuel E. Allgood; MARCUS ALLGOOD; and
MALCOLM ALLGOOD:

BY: ALDEN D. (DOUG) HOLFORD, ESQ.

7515 Kensico

Houston, Texas 77036

FOR DEFENDANT R.J. REYNOLDS TOBACCO COMPANY:

JONES, DAY, REAVIS & POGUE

BY: JUNIUS C. McELVEEN, JR., ESQ.

PETER J. BIERSTEKER, ESQ.

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A P P E A R A N C E S O F C O U N S E L

FOR DEFENDANT THE AMERICAN TOBACCO COMPANY:

CHADBOURNE & PARKE

BY: THOMAS E. RILEY, ESQ.

30 Rockefeller Plaza

New York, New York 10112

BY: SAM W. CRUSE, JR.

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1 JAMES W. HAMMOND, SR.

2 MR. McELVEEN: Let the record
3 reflect that we are about to commence the
4 deposition of Professor James Hammond at the
5 Doubletree Hotel in the Galleria area in Houston,
6 Texas. My name is Junius McElveen. I'm an
7 attorney for R.J. Reynolds Tobacco Company in
8 this case. I believe the reporter has the style
9 of the action.

10 Madam reporter, do you need the
11 identification of all the rest of the folks in
12 the room; or do you already have that for record
13 purposes?

14 THE REPORTER: No, I don't. I have
15 it. Thank you.

16 MR. McELVEEN: Okay. Fine. We're
17 going to be proceeding pursuant to the Federal
18 Rules of Civil Procedure with respect to the
19 taking of the deposition today, and I understand
20 from counsel for -- or I understand from
21 Mr. Holford that Professor Hammond does desire to
22 sign his deposition and will be by agreement
23 signing that before any person authorized to
24 administer oaths.

25 MR. HOLFORD: Thank you.

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2 BY MR. McELVEEN:

3 Q. Professor, Hammond. Would you state
4 your full name, sir.

5 THE REPORTER: I need to swear him
6 in.

7 MR. McELVEEN: Oh, you need to be
8 sworn in, I'm sorry.

9

10 JAMES W. HAMMOND, SR.

11 Having been first duly sworn by ANN M. PLAINOS,
12 CSR, and a Notary Public within and for the State
13 of Texas, was examined and testified as follows:

14

15 EXAMINATION CONDUCTED

16 BY MR. McELVEEN:

17 Q. Doctor Hammond, would you state your
18 full name, please, and your occupation.

19 A. James William Hammond, Sr.

20 Q. And are you presently employed,
21 Professor Hammond?

22 A. No, I'm retired but I serve as an
23 expert witness in consultation.

24 Q. All right, sir. Doctor -- or excuse
25 me, Professor Hammond, I'm going to hand you now

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2 what we will not mark as an exhibit to this
3 deposition but a check for \$2,000. I understand
4 that you were desirous of having the money paid
5 to you sort of in advance of your deposition.

6 And just for the record purposes,
7 just wondering if I might inquire as to why
8 that -- you wanted it that way.

9 A. Well, I had an understanding with
10 other depositions and in the other -- payment was
11 not always available when I got through nor was
12 it adequate for the amount that we had agreed
13 upon.

14 Q. So not -- sometimes in the past not
15 forthcoming or --

16 A. No.

17 Q. -- inadequate amount?

18 All right, sir. Could you very
19 briefly describe for me your approach with
20 respect to the payment of fees. This check is in
21 the amount of \$2,000. Is that your sort of
22 minimum base fee for depositions?

23 A. It is a base fee, and that is
24 according to five hours of testimony. Five --
25 no, excuse me, for four hours of testimony; and I

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1 JAMES W. HAMMOND, SR.

2 limit my duration at depositions because of my
3 age and so forth to four hours a day.

4 Q. All right, sir.

5 A. And -- unless it was a matter that
6 we did not finish and we could finish in another
7 hour or two, but my rate would be at \$500 an
8 hour.

9 Q. So the -- if I'm correct now,
10 basically, if I said thank you very much now,
11 Doctor, and walked out the room and the
12 deposition was finished, the 2,000 would be your
13 minimum amount for appearing here at all, right?

14 A. It is.

15 Q. Okay. And that -- but I get four
16 hours of your time for that, if I so choose to
17 use it?

18 A. That's true.

19 Q. Okay. And then after that, it's
20 \$500 per hour, correct?

21 A. That's correct.

22 Q. Doctor Hammond -- or excuse me,
23 Professor Hammond, I apologize for sort of
24 misspeaking here. Professor Hammond, do you have
25 a different rate if you were to appear live in

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1 JAMES W. HAMMOND, SR.

2 court? Sometimes experts do.

3 A. No. My rate would be the same for
4 court appearance.

5 Q. All right, sir. And I take it as
6 well that it is the same \$500 per hour for
7 reviewing literature?

8 A. No. That is \$100 an hour.

9 Q. Oh, all right, sir.

10 A. And conference with lawyers outside
11 of the deposition is \$200 an hour.

12 Q. All right, sir. Are there any other
13 numbers other than 100, the 200 and the 500 that
14 are part of your fee schedule?

15 A. No, not at this time.

16 Q. Okay. Professor Hammond, would you
17 give me just a very general description of your
18 early background education and training.

19 A. Yes. I have two degrees from
20 Mississippi State University; one is in the field
21 of science with majors in chemistry and physics,
22 and the other was A chemical engineering degree
23 from that institution.

24 Q. All right, sir. Could you tell me
25 the years on that, if you would?

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2 A. 1930 to 1935 at Mississippi State
3 University and then I had a scholarship -- a
4 fellowship and scholarship given me at LSU where
5 I spent two years and completed a master's
6 degree, and I took my degree down there in the
7 field of physiological and biochemistry.

8 Q. All right, sir. And that was what
9 year?

10 A. That was 1935 to '37.

11 Q. All right, sir. Did you obtain the
12 degree in chemical engineering and the major in
13 chemistry and physics jointly, in other words,
14 the same year?

15 A. No, I didn't. I went back and
16 submitted my curriculum what I had finished in
17 work and that was granted to me later, the
18 chemical engineering was.

19 MR. CALDWELL: I'm sorry, I didn't
20 understand. That was what?

21 THE WITNESS: That was granted to me
22 later after I had been out in practice, but I had
23 done the basic work and did -- did all the basic
24 work with chemical engineering and they -- they
25 granted me my degree in chemical engineering

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2 later.

3 BY MR. McELVEEN:

4 Q. All right, sir. You remember what
5 year that was?

6 A. The last one was around in 1950.

7 Q. All right, sir. Did you -- were you
8 just in school through '37, not doing any other
9 type of work?

10 A. No, I went to work for the chemical
11 engineering department of the University of
12 Tennessee in July of 1936, because I'd finished
13 my academic work and I had my thesis work to do,
14 which I did on my own there between 1930 -- July
15 of 1936. And my degree was granted in the next
16 spring graduation exercise in June, I guess it
17 was, June, May or June of 1937.

18 Q. All right, sir. Then you continued
19 on work in -- at the University of Tennessee, did
20 you, after your graduation?

21 A. Yes, I do -- I continued on till
22 nineteen -- first of 1941, five years.

23 Q. What type of work did you do at UT?

24 A. Well, I did a combination of work.
25 I was on the staff of the chemical engineering

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2 department, and I advised with graduate students
3 about that thesis. But in addition, I did work
4 for a contractor we had with the Tennessee Valley
5 Authority, and the problems I worked on there was
6 the elimination and control of fluorine gases at
7 the Muscle Shoals operation down in Alabama on
8 their Tennessee valley chemical plant and then
9 also on phosphine, which was generated there at
10 the same time in their electric furnace.

11 And I developed a method not only
12 evaluating the fluorine but also a method of
13 precipitating the fluorine out of the air so that
14 it didn't get in the air and we didn't have to
15 dump it into the river as soluble fluoride.

16 We actually developed methods that
17 we could precipitate the fluorine and filter it
18 out as opposed to air and water before it went
19 into the river.

20 Q. Uh-huh.

21 A. And we got a couple of patents on
22 that, on that process from the work that I did
23 there.

24 Q. Was the -- had the dam been built by
25 that time down at Muscle Shoals?

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2 A. Yes. It was the first dam that was
3 built, and they were operating off of Muscle
4 Shoals' power and the electric furnaces.

5 Q. Was that a -- that method that you
6 developed for the precipitation of fluorine, was
7 that electrostatic precipitation or how did you
8 precipitate?

9 A. No, we collected it with lime water
10 and the fluorine from the air and then we had to
11 develop a method to render that lime phosphate --
12 I mean, lime fluoride as an insoluble compound so
13 that we could filter it out.

14 Q. So it was a precipitation reaction?

15 A. It was a chemical precipitation
16 reaction.

17 Q. And during that whole five-year
18 period, you worked on that project and others
19 relating to it?

20 A. Yes. Right. Dealing with both the
21 health of the employees that worked there as well
22 as for the community which was -- to remove it
23 from the air that it wouldn't be collected by the
24 foliage, grasses and other thing that the cattle
25 might eat or the horses and we had to protect

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2 them. So...

3 Q. Were fluorine and phosphine both
4 considered to be toxic substances back then
5 during that period of time?

6 A. Yes, they were. On points, fluorine
7 is taken up just like carbon dioxide is and the
8 growth in plants and it will concentrate itself
9 from even the rest of the traits in the air. It
10 will concentrate up to a thousand or more pints
11 of a million in plants and the cattle might eat
12 that. They lose the weight bearing joint of
13 their front legs where most of the weight of
14 cattle is supported. And if it is, then you see
15 them eating around trying to graze on their
16 knees. That's a typical fluorine --

17 Q. Toxicity type of reaction that you
18 see in that?

19 A. Yes.

20 Q. Were those cattle -- I mean, were
21 any of them in that state when you first started
22 the project?

23 A. They were both in Tennessee and
24 Alabama.

25 Q. Professor, what type did -- did this

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2 work generate any published papers during that
3 time frame?

4 A. Yes. They were published in the
5 Journal of Agricultural Association, the
6 Agriculture for American Association of
7 Federal Agriculture -- I forgotten the exact name
8 of it, but it's listed in my -- the papers are
9 listed there in my --

10 Q. Your C.V.?

11 A. -- C.V.

12 Q. All right, sir. When you were
13 talking about looking at potential health
14 effects, did you do any work during that time
15 frame that resulted in papers being published on
16 health effects of fluorine or phosphine?

17 A. Not for the humans, no. We only
18 dealt with the animals.

19 Q. Animals, all right, sir.

20 A. And also the method of
21 precipitating -- precipitating it out so it could
22 be removed by filtration rather than getting into
23 the river.

24 Q. All right, sir. Starting then in
25 1941, what did you do when you quit your job at

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UT?

A. I was offered a position in the United States Public Health Service in the division of industrial hygiene and I went -- and accepted that position and went to the -- National Institute of Health in Bethesda, Maryland; and I worked there in both the laboratories and also getting familiar with the scope of the field, industrial hygiene, as far as the national programs were concerned with the states and so forth.

I was not there very many months and they assigned me to the division of occupational diseases with the State of Massachusetts in Boston, primarily because I wanted to go to school at Harvard some and I wanted to take courses over at the M.I.T., which I did. And I stayed there for a couple of years, two years, 1941 and 1942.

Q. But that was -- I'm sorry, excuse me for interrupting you. That was a P.H.S. assignment up in Boston?

A. Yeah. I still was an officer in the United States Public Health Service.

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2 Q. Prior to the time you went with the
3 Public Health Service, had you had any training
4 or experience, would you say, in the field of
5 what's now come to be known as industrial
6 hygiene, or was that your first experience with
7 it?

8 A. Well, the work that I did there at
9 Tennessee would be today a part of the industrial
10 hygiene work and recognized as industrial hygiene
11 profession --

12 Q. All right.

13 A. -- specialty.

14 Q. Today there are, I guess, are there
15 degrees available in industrial hygiene or
16 certificates available in industrial hygiene?

17 A. Yes, there are. I talked to
18 graduate students in the field here in the
19 medical center at University of Texas School of
20 Public Health for nine years; and I think I had
21 about 180 students enrolled and sat in the field
22 of industrial hygiene, some of them were M.D.s,
23 some of them were nurses, some of them were
24 actually in practice -- went in -- most of at
25 least 80 percent of them went in the practice of

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2 industrial hygiene and it scattered all over the
3 country.

4 Q. How would you define the discipline
5 of industrial hygiene if you were asked to give a
6 short description?

7 A. Industrial hygiene is art and
8 science of being able to recognize substances
9 that are in the industry or occupations of
10 employees that would cause diseases of one nature
11 or another, pinpoint material or conditions and
12 then how to evaluate these in terms of doses as
13 significant as well as looking at control
14 procedures and methods to avoid overexposures.
15 It encompasses all of that plus other related
16 technical services.

17 Q. Okay. So, I don't want to try to
18 recast your testimony, but as I understand it,
19 you basically divided it into three sort of
20 areas; one is the recognition of substances that
21 will -- that will or may cause disease.

22 MR. HOLFORD: Objection, counsel is
23 recasting and I believe mischaracterizing
24 testimony.

25 MR. McELVEEN: Well, that's why I'm

1 JAMES W. HAMMOND, SR.

2 asking him, Counsel.

3 MR. HOLFORD: Well, I believe his
4 answer is on the record.

5 MR. McELVEEN: Well, let me ask him
6 the question this way, if I may.

7 BY MR. McELVEEN:

8 Q. Is it your testimony that one of the
9 subdivisions of industrial hygiene is training
10 people and the recognition of substances that
11 will cause -- will or may cause disease in
12 humans?

13 MR. HOLFORD: Same objection.

14 BY MR. McELVEEN:

15 Q. You can go ahead, though.

16 MR. HOLFORD: Yes. He can go ahead
17 and answer. I can't --

18 A. Well, to be able to recognize the
19 potential problems, would require basic training
20 in this field of industrial hygiene.

21 BY MR. McELVEEN:

22 Q. Another area that I believe you
23 mentioned was -- was doses of significance. Does
24 that portion of industrial hygiene deal with
25 looking at dose response relationships with

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2 respect to various chemicals?

3 A. Well, that's rather a medical
4 question about that response, but the standards
5 that we would follow would be related to being
6 able to, by chemical or other procedure, measure
7 the potential exposure over 40 hours a week and
8 so forth.

9 Q. The so called time weighted average
10 level of chemicals that are being -- to which
11 people are being exposed?

12 A. That is one way to measure the time
13 weighted average, and that has a legal
14 implication today under OSHA.

15 Q. But then there are other ways, I
16 guess, of measuring concentrations and doses to
17 people, is what you're saying when you say, "That
18 is one way to measure"?

19 A. Yes. The other methods double-check
20 you on a matter of amount of exposure and that is
21 by biomedical, biochemical means using the
22 employees as sampling and you're running tests by
23 various means of body fluids, such as urine.

24 Q. Blood leads, for example, that type
25 of thing?

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2 A. And blood and urine and exhaled air
3 is three examples.

4 Q. All right. And a third area that
5 you discuss was control procedures, does that
6 include both engineering and work practice
7 controls?

8 A. The most effective controls are by
9 design of equipment and installation of the
10 exhaust and ducts, fans and so forth that would
11 be involved; and that's the reason my degree in
12 engineering is very important.

13 Q. Uh-huh.

14 A. I can work with the design engineers
15 on an equal basis as peer.

16 Q. Do you -- have you had occasion to
17 be involved in the design of equipment for
18 ventilation or other methods of reducing levels
19 of exposure in workplaces?

20 A. I have.

21 Q. Have you ever consulted on the
22 subject of other than engineering controls? By
23 that I mean, shift rotations and things of that
24 sort.

25 A. I have and that's part of the field

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2 of industrial hygiene practice and training.

3 Q. All right, sir. I take it from some
4 comments that you've said earlier that you do not
5 have any -- do not have a medical doctor degree;
6 is that correct?

7 A. I do not.

8 Q. Okay. And so is it correct that you
9 will not be offering opinions in this case with
10 respect to the diagnosis of the disease that
11 Mr. Allgood had?

12 A. I will not be.

13 Q. All right, sir. I take it also that
14 you're not an epidemiologist?

15 A. I am not.

16 Q. Or a toxicologist?

17 A. I have knowledge of the toxicology
18 because of the courses in biochemistry and
19 psychological chemistry have permitted me to
20 learn those occupational exposure relationships
21 so as to valuate the doses that they might be
22 exposed to.

23 Q. Let me ask the question, then, this
24 way: Will you be offering opinions in this case
25 with respect to the toxicological properties of

1 JAMES W. HAMMOND, SR.

2 any of the materials to which Mr. Allgood was
3 exposed?

4 A. Only those materials with which I've
5 actually had need to determine and to work with.

6 Q. All right, sir. And we'll talk
7 about what you did with respect to this case a
8 little later on.

9 You are not, I take it, a
10 statistician?

11 A. A statistician?

12 Q. Yes, sir.

13 A. No. I've had that subject
14 theoretically and so forth but I have not
15 actually practiced that except in a few cases
16 where I went back and looked at my experiences
17 for a duration of some 40 years or more of
18 exposures and I did apply statistical with the
19 help of an epidemiologist to these exposures and
20 the information that came about with what effects
21 it might have had on the employees.

22 Q. Was this in conjunction with a piece
23 of litigation or was this --

24 A. No. No. Just independently to find
25 out how well we had been doing our protective

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2 program over a period of this duration.

3 Q. Was that investigation the subject
4 of a published paper?

5 A. Yes, it was published in the Journal
6 of Industrial Medicine and you might find it
7 under Dr. Baird, B-A-I-R-D, is the medical
8 director.

9 Q. Okay. Dr. Baird, medical director
10 of Exxon?

11 A. Exxon for a duration some 30-odd
12 years.

13 Q. All right, sir.

14 A. And then there was a Dr. Benson that
15 worked with us on this paper with us. He was a
16 physician also familiar with epidemiological
17 studies. I've forgotten his name -- first name
18 or the initial but Dr. Benson.

19 Q. All right, sir. And so Dr. Baird
20 and Dr. Benson were --

21 A. And Hammond, you'll find.

22 Q. And, of course, you. Do you
23 remember approximately when that paper was
24 published?

25 A. In the 1960s.

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2 Q. All right, sir. And it was in the
3 American Journal of Industrial Medicine?

4 A. It was -- yeah. Well, they changed
5 the names during that period of those journals
6 and so I'm not specific on the title; but it was
7 a Journal of Industrial Medicine, as I knew it in
8 the older days.

9 Q. All right. And that also, I assume,
10 is on your curriculum vitae at some point?

11 A. Yes.

12 Q. All right, sir. We've begun to
13 discuss your subsequent work. So, let me go back
14 and just pick that up as a matter of course, if I
15 may.

16 After you had worked for the Public
17 Health Service, when did you -- was the Boston
18 duty station, for lack of a better term, the last
19 duty station you had at the P.H.S.?

20 A. No. The last P.H.S. station was in
21 the State of South Carolina with the Department
22 of Health there. I was transferred or moved from
23 my position up in Massachusetts to the State
24 Department of Health in South Carolina to
25 establish a statewide program for them during the

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2 war years.

3 Q. A statewide program on what subject?

4 A. Broad field of industrial hygiene
5 and control of any possible problems that may be
6 associated, particularly with the manufacturer of
7 ammunitions and fabrics and other materials that
8 were headed for the armed forces.

9 Q. And when was that tour of duty
10 completed?

11 A. When did I leave there?

12 Q. Yes, sir.

13 A. I left -- I left there in early part
14 of 1947.

15 MR. CALDWELL: '47.

16 THE WITNESS: '47, yes, after the
17 war.

18 BY MR. McELVEEN:

19 Q. I'm sorry, excuse me. And at that
20 point, where did you go?

21 A. I accepted a position with Georgia's
22 state Department of Health as a social director
23 of the division of industrial health, and that
24 was a statewide program.

25 Q. And what were your duties at that

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2 job?

3 A. Supervised the -- and enforced the
4 state regulation regarding industrial hygiene
5 matters in the State of Georgia with a staff of
6 16 to 17 people.

7 Q. How long did you stay there?

8 A. I just stayed there a short period
9 until I had finished a short course at --
10 teaching at Georgia Tech and that took me three
11 months on that. And I stayed there for a total
12 of seven months, I believe it was.

13 Q. All right. And then where did you
14 go?

15 A. I came to Columbia to establish a
16 program in the original company of Exxon, which
17 was the Humble Oil & Refining Company, in the
18 medical department. And I came here and that --
19 they were employed -- I was employed by them and
20 then they asked -- I asked them to let me finish
21 my teaching at Georgia Tech, they did and I came
22 here at the first of September, 1947.

23 Q. All right, sir. And what were your
24 beginning duties in that job?

25 A. Well, the assignment was to

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2 establish an industrial hygiene company-wide
3 program for them, Humble Oil & Refining Company,
4 and also to take care of the sanitary and
5 engineering matters of water supplies and other
6 waste disposal that was associated with the camps
7 and plants and the pipeline stations and so
8 forth.

9 Q. What was the -- you remember when
10 you began -- the approximate size of the company,
11 as far as personnel were concerned?

12 A. No, I'd just have to guess. I don't
13 recall.

14 Q. Okay. How many refineries and so
15 forth were you charged with looking at for
16 purposes of these duties that you've described?

17 A. The large refinery at Baytown was
18 the main refinery. They were closing down the
19 one at Corpus Christi at that time and so I
20 didn't have very long -- that responsibility.
21 But I had many gas plants and they were all under
22 my supervision and health matters, as well as the
23 pipeline, handling of products such as terminals
24 and gases and other materials that went up to
25 Irving.

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2 I had a range of maybe probably
3 two -- 24 gas plants and refineries and terminals
4 to look after as well as pipeline stations. The
5 total amount then would add up, I'm sure, to near
6 50.

7 Q. All right, sir. When you first came
8 to Humble were you reporting to the medical
9 director?

10 A. Yes, I was.

11 Q. Okay. And at what -- were there any
12 problems that you were initially assigned? In
13 other words, medical director would say, "Hey,
14 we've got a problem in this area. I want you to
15 look at it and see what we can do about it"?

16 A. Well, the first -- or the assignment
17 definitely was the Baytown refinery, to go
18 through the Baytown refinery and see if I
19 detected any potential problems there that was
20 not under medical and safety supervision are
21 adequate and that was my first assignment.

22 Q. And how long did it take you to --
23 to go through Baytown and reach your conclusions?

24 A. I did that in a matter of about
25 four, five months.

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2 Q. What -- did you ascertain that there
3 were problems that were not being addressed at
4 that time?

5 A. Yes, there were. There was problems
6 associated with the method they were using for
7 cleaning old equipment, such as pipelines and so
8 forth, in the refinery that had been covered with
9 red lead. And my test evaluation showed that
10 they were getting excessive amount of lead
11 exposure to certain people and we had more than a
12 hundred employees working in that operation when
13 I came to the -- help us clean the lines and the
14 painters who applied it and so forth. So, I
15 found some overexposures in that part and that
16 was the first corrected measures I made.

17 Also, I found them using a method
18 that came with a unit that they had organized
19 that it was called a dewaxing unit. It was a
20 matter where they were using a method, a mixture
21 of methyl ethyl keton plus benzene to extract the
22 wax under cold temperature; and I found that the
23 exposure to benzene was not acceptable. It was
24 excessive and that was a brand new unit they had
25 taken from the -- preparation and installation by

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2 Texaco.

3 So, I recommended that we substitute
4 some other solvent in lieu of the benzene, and we
5 found that toluene would do the job really more
6 effective than benzene. So, we never bought any
7 more benzene for that purpose, because that was
8 the case of method control elimination, so far as
9 you could, of a toxic material.

10 Q. Was the -- was benzene at that time
11 thought to be -- have adverse human health
12 effects?

13 A. Very definitely. Fortunately, in
14 Massachusetts, where the benzene problem had
15 shown up, Dr. Horner had reported on the cases,
16 going back to 1939, he published his papers on
17 that.

18 Q. Uh-huh.

19 A. And I was associated with the people
20 like Dr. Elkins and others, Bowditch, Drinker
21 that had worked with him on the degree of
22 exposure that these people had been exposed to.

23 Q. And the adverse health effects
24 associated with benzene were what, at that time,
25 thought to be what?

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2 A. Benzene at that time was coated --
3 we had two, in fact, because of the lack of
4 knowledge before these studies had been done. In
5 the late '30s, they were using excessive amount
6 of benzene exposure in the artificial leather
7 manufacturing procedures.

8 So we had a bit many cases of acute,
9 I would call acute, exposure and that would
10 result in the destruction of the white cells and
11 the defense of the blood, and that permitted them
12 to die of ordinary diseases like flu and
13 pneumonia and others that they couldn't control.

14 Q. Now, you said an acute type of
15 effect?

16 A. I would call that acute because of
17 the excessive exposure that was known to be
18 harmful, and the value they were trying to get it
19 down to was like a hundred parts per million.

20 Q. Okay.

21 A. And then after they had that
22 controlled, then workers had a latent period of
23 exposure to small amounts and we began to see the
24 leukemia cases and they were recognized as being
25 caused by much exposures of benzene.

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2 Q. All right, sir.

3 MR. CALDWELL: I'm going to have to
4 ask both of you to keep your voices up. There's
5 some interference up above, and I'm simply not
6 hearing half the question and half the answer.

7 THE WITNESS: I will remember.

8 MR. McELVEEN: That's fine, sir.

9 BY MR. McELVEEN:

10 Q. Doctor, when you made the
11 recommendations to Humble on these two issues,
12 the red lead and the dewaxing department, were
13 those recommendations immediately instituted?

14 A. They were.

15 Q. All right.

16 A. We had not been and as operation of
17 the detection of these problems more than a month
18 and the medical director and I went before the
19 board of directors of our company to explain that
20 we've seen the potential problem or hazardous
21 potential problem and they gave us without
22 reservations or without restrictions authority to
23 take whatever action we recommended on
24 controlling these materials.

25 And so, the management at the

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2 refinery had sat in on our health and safety
3 committees and he issued an order immediately for
4 the laboratory people to begin -- research people
5 to begin work to find a substitute for benzene
6 and they came up with this. Well, fortunately,
7 today, that substitution of toluene for benzene
8 is worldwide in this process.

9 Q. Has it been your experience over the
10 course of time, though, that sometimes when a
11 substitute was developed for a hazardous process
12 that the substitute didn't turn out to be any
13 less hazardous?

14 A. I don't believe I've ever had that
15 mistake happen. I knew what toluene was like,
16 and I knew that -- what benzene was like because
17 I've had this intimate association with the
18 authorities.

19 Q. All right. What was the
20 recommendation and the implementation with
21 respect to the red lead burning?

22 A. Mainly respiratory protection of an
23 individual on the job with respirators and then
24 housekeeping. The housekeeping included such
25 simple things as preparing -- or clean tool boxes

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2 and making them leave their lunches and things
3 out in the areas where the lead was being
4 contained such as tools and things of that type
5 and built them a special unit, portable units for
6 the purpose of their food and their water and so
7 forth to prevent contamination so it would reduce
8 intake by ingestion.

9 Q. And this was all done in the 1948
10 time frame?

11 A. Yes. By that time -- by the time I
12 had been here a year, we had all those things
13 under control.

14 Q. Professor, you talked about the
15 lowering of the level of benzene to -- I'm sorry,
16 you talked about the permissible level of
17 exposure or the -- to the desired level of
18 exposures were of a hundred parts per million.
19 Was that a standard at that time that had been
20 promulgated by any agency or anything?

21 A. That was the standard that the
22 division of occupation and diseases, Dr. Elkins
23 and his staff, had found existed out in the
24 plants where early I told you that they had
25 suffered acute exposures that led to ordinary

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2 diseases killing employees.

3 And so that was the first standard.
4 Now, that was before I actually arrived on the
5 scene because when I got there, they were working
6 toward a standard of 50 parts per million. And
7 so I participated in that type of evaluation.

8 Q. And when you say "they were working
9 toward a standard of 50 parts per million," who
10 was that?

11 A. The State Department of Labor who
12 was in charge of these occupational diseases
13 division. They had set that as a state standard,
14 and the other standard that I told you about was
15 the ones that had existed before and still was
16 present in some industries before we got them
17 down.

18 Q. And when you say the State
19 Department, you're speaking of the Texas State
20 Department of the industry?

21 A. No. No. Texas State Department I
22 wasn't familiar with. This was a division of
23 occupational diseases in the State of
24 Massachusetts.

25 Q. All right, sir. Do you know when

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2 you arrived in Texas whether Texas had a
3 permissible standard?

4 A. They had a recommended standard that
5 had been established by the American Conference
6 of Government and Hygienists and I don't recall
7 now just what that standard might have been but,
8 more likely, it was in that range, which was 35
9 to 50 parts per million in 1947.

10 Q. But you had no specific recollection
11 of what it was at the time?

12 A. I do not remember the Texas
13 standard.

14 Q. Do you recall what the OSHA
15 permissible level of exposure to benzene is at
16 the present time?

17 A. I'm not familiar with OSHA. I've
18 lost track of them. When they put their levels
19 into their code, it was at ten parts per million.

20 Q. That was the 1971 movement --

21 A. It was.

22 Q. -- of the ACGIH recommendations over
23 to the OSHA standards?

24 A. Well, they didn't use -- ACGIH was
25 still at 25 parts per million, but they used the

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2 American Standard Association's recommendation,
3 which was the independent group that had
4 recommended the -- and they adopted it from that
5 standard.

6 Q. American National Standards
7 Institute, ANSI, the ANSI standard?

8 A. Yeah, at the time.

9 Q. Okay. In this early years with
10 Humble, were you a member of the American
11 Conference of Governmental Industrial Hygienists,
12 ACGIH?

13 A. No, I wasn't because they did not
14 recognize industry personnel to be eligible for
15 that purpose. It was a government enforcement
16 agencies such as the states and counties and
17 cities, and they would accept members that were
18 in full-time teaching profession of industrial
19 hygiene.

20 Q. Had you been in the ACGIH when you
21 were at the Public Health Service?

22 A. I was.

23 Q. Okay.

24 A. And with the State of South Carolina
25 and Massachusetts and Georgia.

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2 Q. All right, sir. Let me finish up
3 your career paths, as we've been talking about
4 that at least off and on a little bit. How long
5 did you work for Humble?

6 A. Thirty-one years, practically.

7 Q. All right, sir. And --

8 A. Retired in '78.

9 Q. All right, sir. And I believe you
10 mentioned, also, that you'd done some teaching.
11 When was that interspersed with your work?

12 A. Oh, I was teaching both night
13 courses over in South Carolina from 1943 until
14 1945 or so, I forget what it was. And then I
15 taught at Georgia Tech in 1947 and then I moved
16 here to Houston and I taught at Baylor Medical
17 then as adjunct professor for the next 25 years,
18 I suppose.

19 Q. And what course or courses did you
20 teach at Baylor?

21 A. In Baylor, I was teaching a course
22 that was in the field of public health at the
23 sophomores students, sophomore class students.

24 Q. Of sophomore class of med school?

25 A. Of med students, yes.

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2 Q. And did you teach that pretty much
3 every year, or did you teach some years each
4 month?

5 A. Yes, I'd lecture every year.

6 Q. All right. How long a series of
7 lectures would you give on that public health?

8 A. On an average, that would be two
9 different classes during that period of time; one
10 of the groups were for two and three lectures of
11 one to three hours and the other coming in the
12 spring. So a total of about six, seven hours a
13 week -- I mean, a year of each month.

14 Q. Okay. Okay. And during that course
15 on public health, what types of topics did you
16 examine, look at with the med students?

17 A. I know it's primarily on the
18 occupational exposure and diseases, methods how
19 to -- for the medical groups to use metric
20 methods of valuating the employees in their own
21 office, values in blood urine and other fluids.

22 Q. And sort of how to go about
23 recognizing a potential occupational exposure and
24 did you talk about taking histories and that type
25 of thing with them?

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2 A. No. I was joined in my operations,
3 more or less, would be the technical techniques
4 of measuring these minute quantities and the
5 fluids. And I was always, of course, supported by
6 jointly medical personnel, the M.D.s and so forth
7 and they teach us the symptoms and evaluation and
8 recognition. I didn't do that.

9 Q. Okay. Okay. Now, after -- and that
10 was pretty much that 25-year time frame coincided
11 with your work at Humble subsequently Exxon,
12 pretty much, right?

13 A. I did. Uh-huh.

14 Q. Okay. After you retired from Exxon,
15 what did you do?

16 A. I joined the School of Public Health
17 at the University of Texas School of Public
18 Health in the medical center and started classes
19 with graduate students in the field of industrial
20 hygiene and occupational evaluation and so
21 forth. And I taught there for nine years.

22 Q. What would -- and I assume that at
23 that time you had a full course load? I mean, in
24 other words, you thought both semesters, pretty
25 much through the semester.

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2 A. I was a full-time employee teaching
3 staff.

4 Q. Okay. What were your courses, if
5 you recall, over that nine-year period of time?

6 A. Oh, the courses that I taught was
7 the basic -- the fundamentals of industrial
8 hygiene and all of that matter, and then I taught
9 laboratory procedures with some assistance from
10 chemists as to how to go about evaluating and
11 using proper methods of collection of samples and
12 other related matter, which we were really known
13 as a laboratory course during that period.

14 Q. Were you using a particular textbook
15 during that time period on the fundamentals of
16 industrial hygiene?

17 A. Yes. About that time, the Public
18 Health Service had put out this book on the
19 Fundamentals of Industrial Hygiene that prepared
20 it. There was a NIOSH activity. They were with
21 the research group and investigative group
22 located in Cincinnati.

23 Q. Uh-huh.

24 A. And they published this book and I
25 used that as a basic --

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2 Q. Something like recognizing and
3 dealing with occupational -- diseases of
4 occupation or something like that --

5 A. They covered in the broad field of
6 not only industrial hygiene purely but also an
7 introduction into the types of diseases that they
8 produced, would be caused from agents and
9 standards and control measures.

10 We gave a full course on how to
11 design control procedures such as exhaust
12 ventilation, and I got a specialist in the field
13 of industrial hygiene who specialized in
14 mechanical engineering to teach that particular
15 course for my students.

16 Q. Did you utilize any -- did you
17 utilize physicians to -- to each part of the
18 course dealing with the recognition of
19 occupational diseases?

20 A. Yes. I would call on the specialist
21 who was a member of our staff that teach on the
22 method of the class and, for example,
23 dermatology, which is skin irritations.

24 Q. You'd used Marcus Key or somebody
25 like that?

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2 A. Well, Marcus had his own courses
3 parallel to mine and most of my students took his
4 course anyway to the help of Dr. Bob Wise and I
5 would use Marcus', of course, with dermatology.
6 He lectured to me sometimes but there was a
7 Dr. Tucker who was over in the school of medicine
8 there that was teaching dermatology and he was
9 very cooperative and taught several courses --
10 several hours of lecture to me, my class.

11 Q. Is it fair to say that when issues
12 with respect to the recognition of symptoms of
13 occupational disease came up, you turned that
14 over to an M.D.?

15 A. I did, a specialist like Dr. Key,
16 Dr. Wise and Dr. Tucker.

17 Q. Okay. You talked about the
18 measurement of body fluids, blood and urine.
19 Have you ever had an occasion to actually draw
20 those or collect those yourself and measure
21 them? You talked about teaching it.

22 A. No, I always had the medical
23 technicians to do that or the nurses was approved
24 for that purpose or the physicians. I never did
25 get involved in that.

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2 Q. Okay. Were you consulted during
3 your career at Humble about what certain levels
4 meant? Would they come to you and say we have
5 collected these blood leads on these people, tell
6 us what they mean or was that somebody else's
7 job?

8 A. Generally, under my supervision, we
9 set up an industrial hygiene laboratory at the
10 medical department at Baytown and had a full-time
11 chemist who was trained in the techniques of
12 doing these tests, named Taylor. And so we sent
13 samples from all over the territory to him and he
14 did that type of work for us full time. And he
15 was on our payroll.

16 Q. And then once Mr. Taylor had gotten
17 the values, what were done with the values? Were
18 they turned over to the medical director?

19 A. They were shared with the medical
20 director, and I received a copy of it.

21 Q. Did you ever have occasion to have
22 the medical director ask you, "Here's some
23 values. What should we do about them? Are they
24 too high?" That type of thing.

25 A. Well, sometimes we debated over the

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2 values and determined if the employee had had an
3 exposure of some type or some degree to toxic,
4 potential toxic materials.

5 Q. My recollection is that the
6 Occupational Safety and Health Administration and
7 NIOSH didn't really get created until 1970; is
8 that about your recollection about that time
9 frame?

10 A. It came into being at the same time
11 OSHA was accepted.

12 Q. Okay. Let's assume that's '70, '71
13 time frame. Prior to the existence of OSHA, was
14 there a national organization that set
15 permissible exposure limits to chemicals in the
16 workplace?

17 A. The various states on their own and
18 enforce them.

19 Q. And Texas had such a setup, at least
20 in the --

21 A. They did.

22 Q. What was that a part of, the
23 Department of Public Health in Texas or --

24 A. Yeah, Department of Health.

25 Q. Was there -- did there come a time

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2 when the ACGIH did permit corporate industrial
3 hygiene members?

4 A. Not during my practice. I
5 understand today they have consultants in that
6 field in which they call on them, but they don't
7 have a vote.

8 Q. Okay.

9 A. They call it TLVs.

10 Q. Okay. You served and we're going to
11 talk about it a little later on one of the TLV
12 committees, I believe, didn't you?

13 A. I did after I began teaching.

14 Q. All right, sir. And during the
15 course of your work at Humble and subsequently
16 Exxon, did you have occasion to use the ACGIH,
17 TLV values as sort of the guideline or the
18 standard by which you looked at the potential for
19 people being overexposed to certain things?

20 A. There was certain areas in which I
21 didn't have any day-to-day responsibility for and
22 other -- other things and sometimes those
23 questions would come up and I'd would refer to
24 the TLV booklet to determine what they were. And
25 it told them within use of the limitations of the

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2 TLV, these would be what I propose that they
3 apply.

4 Q. What would your understanding have
5 been as to the limitations of the TLV values at
6 that time? You said subject to the limitations,
7 and I just wanted to ask you what you believe the
8 limitations are?

9 A. Well, the TLVs are prepared to be
10 used only by professionally trained and qualified
11 industrial hygienists. They're not for the
12 layperson and they're not for enforcement by
13 legal action. They're guides.

14 MR. McELVEEN: Okay. If you'd like,
15 we can take about a two or three minute break
16 here. We've been going pretty much an hour.

17 THE WITNESS: Yeah.

18 MR. McELVEEN: You want to take a
19 couple minutes and then come back?

20 THE WITNESS: That will be fine.

21 (Brief recess.)

22 (Hammond Exhibit Nos. 1 and 2
23 marked for identification.)

24 BY MR. McELVEEN:

25 Q. Professor Hammond, let me just

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2 follow on into the tail end of your previous
3 testimony just as we broke.

4 You taught at the School of Public
5 Health for nine years, I believe you said?

6 A. Yes, I did.

7 Q. And so that would be up through
8 about '87?

9 A. '87.

10 Q. What did you do then?

11 A. I got married.

12 Q. Well, all right. And did you then
13 quit your job as a result of that?

14 A. No, I limited my work from then on
15 to just consulting work.

16 Q. All right, sir. Is it -- do you
17 keep up with the literature on industrial hygiene
18 separate and apart from litigation activities?

19 A. I'm on a mailing list of all of the
20 specialty journals and so forth, and I do look at
21 those. I don't always read them word for word,
22 but I examine them.

23 Q. All right, sir. And could you
24 describe for me what specialty journals you do
25 get.

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2 A. I get the journal from the American
3 Conference of Government Industrial Hygienists.
4 I get the journal from American Industrial
5 Hygiene Association. I get the journal from the
6 Hygiene Academy, and then I get several working
7 in the field of health and safety that are
8 complimentary from the journals, like the titles
9 are usually Safety and Health related in that
10 matter and they're published in various places.
11 I get and receive complimentary copies from most
12 of those journals.

13 Q. All right, sir. Now, you described
14 very briefly in our last hour your involvement
15 with the ACGIH, TLV project for 1979; and I'm
16 going to show you a document -- actually, I think
17 I'll ask the court reporter to mark it; but
18 before she marks that, I want to ask you about a
19 couple of other items.

20 First of all, let me show you a
21 document what's been marked Exhibit No. 1 here
22 over the break. That's our notice of intention
23 to take your oral deposition.

24 A. I received a copy.

25 Q. I guess we have -- we erroneously

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2 referred to you, I guess, there as doctor. You
3 do not have a Ph.D.; is that correct?

4 A. No. It's an honorary doctorate
5 given me by the Houston Baptist University. I'm
6 a trustee out there and they gave that to me, an
7 honorary because I helped them some nine years.

8 Q. What is the Ph.D. in?

9 A. No, it's just honorary letters from
10 the Houston Baptist University.

11 Q. Okay. Professor Hammond, there is
12 an Exhibit A on the back of this notice that
13 requested that you bring certain things with you
14 to the deposition. Did you bring anything with
15 you to the deposition today?

16 MR. HOLFORD: Okay. Plaintiffs
17 will -- I received the Notice of Deposition, and
18 plaintiffs will object to it requiring the
19 production of anything unless y'all wish to tell
20 me on what ground you made by notice to me
21 required production by an expert.

22 MR. CALDWELL: Well, maybe --

23 MR. HOLFORD: Well, I'm not
24 necessarily going to argue with you. I just want
25 to know your --

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2 MR. CALDWELL: Well, good, then let
3 me talk for a minute.

4 MR. HOLFORD: Okay.

5 MR. CALDWELL: We've got a four hour
6 time limit here. We'd like to answer the
7 question, first: "Did he bring anything with
8 him?"

9 THE WITNESS: I have --

10 MR. HOLFORD: No. No. Don't. I
11 have made objection to the document.

12 MR. CALDWELL: I just want to know
13 an answer whether he brought anything with him or
14 not so we that can decide whether to pursue this
15 on the record or off the record since we're
16 paying \$500 an hour for this argument.

17 MR. HOLFORD: Yeah. You should
18 peruse the question, yes. What are your grounds
19 for serving on me a Notice of Deposition and
20 trying to require my expert to bring something?

21 MR. CALDWELL: Doug, what I want to
22 know is: Did he bring anything with him?

23 MR. HOLFORD: Okay, Mr. Caldwell. I
24 have some items now, yes.

25 MR. CRUSE: So you would prefer us

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2 to subpoena him downtown to --

3 MR. CALDWELL: I'm sorry, he has
4 been subpoenaed.

5 MR. CRUSE: Yeah.

6 MR. HOLFORD: Yeah. We also object
7 to the subpoena on -- in that it was served, I
8 believe, yesterday; and that's hardly time to
9 bring anything.

10 Are the defendants saying that
11 service of notice on plaintiffs' counsel is
12 effective to require plaintiffs' expert to
13 produce something?

14 MR. CRUSE: Yes.

15 MR. CALDWELL: And certainly a
16 service of subpoena is effective.

17 MR. HOLFORD: Well, we've objected
18 to that on timeliness but -- untimeliness.

19 MR. CALDWELL: Objecting to it here,
20 it doesn't solve the problem, Doug.

21 MR. HOLFORD: I just want to know --

22 MR. CALDWELL: Particularly when
23 we're paying \$2,000 for the time.

24 MR. CRUSE: We'll bring him back
25 downtown at a later date and no money. We'll do

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2 it that way.

3 MR. HOLFORD: Do all defendants say
4 that this Exhibit 1, the Notice of Intention to
5 Take Deposition, is effective to require my --
6 the expert, the plaintiffs, to bring documents
7 Mr. Cruse said, "yes."

8 You're the same. Okay. Does R.J.R.
9 say yes?

10 MR. BIERSTEKER: Yes, we do, but he
11 was also independently served.

12 MR. HOLFORD: All right. Then we
13 will produce according to the Item No. 1 except
14 save an objection to No. 2 to the extent -- and
15 we'll have to look at it. I'm not sure there is
16 any -- but to the extent there's any work product
17 of mine called for there.

18 MR. CALDWELL: Doug, this is not
19 your deposition. This is your expert's
20 deposition.

21 MR. HOLFORD: It is noticed --

22 MR. CALDWELL: And I object to your
23 saying what he will do. He's been served with a
24 notice of which you got a copy. He's been served
25 with a subpoena. We're entitled to get answers

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2 from the witness.

3 MR. HOLFORD: Yes. And I'm entitled
4 to lay objections, also, which I just did.

5 All right. You want to proceed?
6 You want to go with No. 1?

7 MR. McELVEEN: I think that might be
8 the best bet, yeah.

9 MR. HOLFORD: Okay.

10 BY MR. McELVEEN:

11 Q. Doctor, you have -- or I'm sorry,
12 Professor Hammond, you have in front of you the
13 Exhibit A, and let me just run down this very
14 quickly. Did you bring any items with you today
15 that are responsive to that Item No. 1 on
16 Exhibit A?

17 A. I did not.

18 Q. All right, sir. What about No. 2,
19 do you have any items with you today in response
20 to No. 2?

21 A. I turned that question over to the
22 plaintiffs' counsel and whatever I have that he
23 would have to -- as it shows here.

24 MR. HOLFORD: Do you have your --

25 THE WITNESS: Yes.

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2 MR. HOLFORD: That's the one that is
3 probably a few items. And I didn't get a --

4 (Witness confers with counsel.)

5 MR. HOLFORD: Now, by the way,
6 Mr. McElveen, we're not prepared to release any
7 of these. I will be glad to turn them over to
8 local counsel, Mr. Caldwell, on the idea they can
9 be copied and returned to us, however.

10 MR. McELVEEN: That's --

11 MR. HOLFORD: I did not have time to
12 make copies.

13 MR. McELVEEN: Okay.

14 MR. HOLFORD: Okay. Now I'm --
15 (Witness confers with counsel.)

16 MR. HOLFORD: Okay. That's almost
17 everything.

18 MR. CRUSE: Well, what about
19 everything? Is that yellow folder, is that what
20 you gave Mr. Holford?

21 MR. HOLFORD: Yellow folder?

22 MR. McELVEEN: Well, wait a minute.
23 Let me --

24 MR. HOLFORD: No, that's --

25 MR. CRUSE: Oh, okay.

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2 MR. HOLFORD: No. Okay. Now,
3 these, I believe, are going to be 2 and 3.

4 MR. McELVEEN: Okay.

5 MR. HOLFORD: In other words --

6 MR. McELVEEN: Essentially,
7 correspondence back and forth between the two of
8 you?

9 MR. HOLFORD: Yes, sir.

10 MR. McELVEEN: Okay.

11 MR. HOLFORD: And I have 1, 2, 3, 4,
12 5, 6, 7, 8, 9, 10, 11, 12, 13. Okay. There are
13 13 separate items here, some of which are stapled
14 and have many -- have more than one page, but --

15 MR. McELVEEN: Okay.

16 MR. HOLFORD: And again, we need
17 those back but you may copy them.

18 MR. McELVEEN: All right. Fine.
19 Let me ask if it would be acceptable to you to
20 have this stack marked and have the reporter copy
21 them and return them to you?

22 MR. HOLFORD: Yes.

23 MR. McELVEEN: Okay. Why don't we
24 just, if we could --

25 MR. CALDWELL: It'd be a lot cheaper

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2 for our clients, however, if you got your local
3 counsel to do it but that's okay.

4 MR. McELVEEN: Well, I know; but
5 that's --

6 MR. HOLFORD: Well, yes, on second
7 thought, I am having a copy. Yeah. Well, yeah,
8 just might as well. I mean, it'll happen quicker
9 if Mr. Caldwell will agree to --

10 MR. CALDWELL: Mark them and we'll
11 copy them.

12 MR. McELVEEN: All right.

13 MR. HOLFORD: And provide the
14 reporter a set, also.

15 MR. CALDWELL: Sure.

16 MR. HOLFORD: Well, no. Do you need
17 to do that? Do you need to make them exhibits?
18 That's a lot of pages.

19 MR. McELVEEN: I -- no, I know. I
20 have -- it has been traditionally been my
21 approach to do so, but I'm certainly glad to bow
22 to the will of the majority here. If we don't
23 want them exhibits to the deposition, that's fine
24 with me.

25 MR. HOLFORD: All right. Yeah.

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2 MR. McELVEEN: All right. I'll tell
3 you what, then --

4 MR. HOLFORD: That's why I counted
5 them, actually.

6 MR. McELVEEN: Okay. Let me just --

7 MR. HOLFORD: Or you can identify
8 them on the record, if you want. Letter of such
9 and such, you know.

10 MR. McELVEEN: That's fine. I think
11 what we might do, since I may have a question on
12 it, if we could just clip them and I'll just put
13 them sort of right here in the middle of the
14 table for the moment.

15 MR. HOLFORD: All right.

16 MR. McELVEEN: And then finish going
17 on through the list and we can move on to
18 something maybe a little more substantive.

19 MR. HOLFORD: Oh, I'd also like to
20 state that I didn't see in Professor Hammond's
21 file a copy of the opinion letter that he gave to
22 me; but we have produced copies of that letter.
23 Mr. Roger's letter to me is in this stack here.

24 MR. McELVEEN: Right.

25 MR. HOLFORD: We also produced that.

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2 MR. McELVEEN: And, in fact, I have
3 that, and we'll mark that a little later.

4 MR. HOLFORD: All right.

5 MR. RILEY: When you say "the
6 opinion letter," you're talking about the August
7 4th, 1992 letter, is that the one you're talking
8 about?

9 MR. HOLFORD: Yes, I am.

10 MR. CALDWELL: Do I understand it,
11 you went through his file and selected what would
12 be produced?

13 MR. HOLFORD: No. I looked in his
14 file only to see if there was anything in it that
15 I would claim as a work product and to not
16 produce.

17 MR. CALDWELL: His file that you
18 would claim, it was your work product?

19 MR. HOLFORD: Yes. Professor
20 Hammond -- oh, I didn't find any, Mr. Caldwell.
21 Professor Hammond, sitting on my right here,
22 looked at the file along with me and we agreed on
23 what would be called for by this Paragraphs 2 and
24 3 from his file.

25 BY MR. McELVEEN:

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2 Q. Professor Hammond, let me just go
3 back with you for one second. And for record
4 clarification purposes, am I correct in
5 understanding from sort of the discussions that's
6 gone on, that when you received, or you and
7 Mr. Holford got this subpoena and the Exhibit A,
8 that you and he sat down together and you gave
9 him your file and you looked at it together; is
10 that correct?

11 A. I had all of my material together at
12 that time, yeah.

13 Q. And while Mr. Holford was looking
14 through the record here just a few minutes ago,
15 it seemed that he had pulled that out of his
16 briefcase. Had you given him your file?

17 A. No.

18 MR. HOLFORD: No, this is his
19 briefcase.

20 BY MR. McELVEEN:

21 Q. Oh, okay. That's your briefcase.
22 Okay. I just want to make sure I understand.

23 A. I turned it over to him.

24 Q. Okay. But you brought it with you
25 and turned it over to him this morning?

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2 A. I did.

3 Q. Okay.

4 A. That's correct.

5 Q. You mentioned that with respect to
6 Item No. 1 here that you had no item here that
7 was responsive to that No. 1. Is that because
8 there is no touch item?

9 A. I did not have a written -- no, I --
10 in written out, I did not have that.

11 Q. All right, sir.

12 A. But it's on file in many of my other
13 depositions that this is an agreement and terms
14 of cost.

15 Q. Oh, I understand. But what you're
16 saying is that you have no written retainer or
17 engagement letter with Mr. Holford per se for
18 this case?

19 A. Not at all.

20 Q. Okay. Numbers 2 and 3, we've
21 already talked about and that's what's
22 represented by this set of materials. To your
23 knowledge, looking at Nos. 2 and 3, is that --
24 have you turned over everything that you believe
25 is called for under Nos. 2 and 3 that you had?

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2 A. I believe that calls -- that is
3 complete.

4 Q. All right, sir. No. 4, are there
5 any documents that you have that are responsive
6 to No. 4 here on this Exhibit A?

7 A. Not to my knowledge.

8 Q. All right, sir. No. 5, are there
9 any items under No. 5 that you believe are
10 responsive that you are not turning over?

11 A. No, there's no --

12 MR. HOLFORD: Yeah. I didn't see it
13 in Professor Hammond's file, but we want to be
14 complete here. Let me see if I can find what I'm
15 thinking of here.

16 Well, I guess all I have is a --
17 well, of course, he wouldn't have that.

18 MR. McELVEEN: He would have sent
19 you a bill, I guess, if a bill would have been
20 sent. So, he might have kept a copy.

21 MR. HOLFORD: I don't know that
22 that's -- unless it's in what I gave -- what I
23 put in that bunch. Who has that?

24 MR. McELVEEN: Peter does.

25 MR. HOLFORD: Okay. Unless there's

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2 a figure in there, but I see a check -- my check
3 here for \$400 to Professor Hammond.

4 MR. McELVEEN: And I believe that
5 is, in fact, covered in your top letter saying,
6 "Here's a check for \$400."

7 MR. HOLFORD: All right. Yeah, I --
8 okay.

9 MR. McELVEEN: So, in other words,
10 it is covered.

11 MR. HOLFORD: All right.

12 BY MR. McELVEEN:

13 Q. Doctor -- or excuse me, Professor
14 Hammond, looking at No. 6 on Exhibit A, did
15 you -- you mentioned that you have consulted in
16 an expert capacity before. Do you not retain
17 copies of any depositions or transcripts of
18 anything that you have done?

19 A. I have retained one or two.

20 MR. HOLFORD: And by the way, these
21 are coming out of my briefcase because they're
22 bulky and a little heavy for Professor Hammond.
23 I just carried them over here today.

24 MR. McELVEEN: Okay.

25 BY MR. McELVEEN:

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2 Q. And Dr. Hammond, let me -- you're
3 welcomed to look at them, sir, if you wish; but I
4 assume that these represent what you had in the
5 way of transcripts?

6 A. I turned them over to him last
7 night.

8 Q. Okay. We'll put those over there.

9 Professor Hammond, look, if you
10 would, with me at No. 7 on Exhibit A. Are there
11 any items that are responsive to No. 7 in your
12 possession?

13 MR. HOLFORD: Let me say to
14 Mr. Caldwell looking at those depositions, we do
15 not need another copy of those. We'd just like
16 those back. Okay. Go ahead.

17 A. (Reading) Any calendars, diaries,
18 appointment books or appointment summaries,
19 similar documents showing your appointments for
20 deposition or trial testimony from January 1,
21 1989 to present. I don't have such a record.
22 BY MR. McELVEEN:

23 Q. All right, sir. No. 8, is there
24 anything in your possession that is anything like
25 No. 8 or is No. 8?

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2 A. No, I don't have that.

3 Q. All right, sir. I believe your
4 curriculum vitae is appended as one of the items
5 you have handed over. So that's No. 9.

6 No. 10, did you bring with you
7 copies of all of the documents that you have in
8 your possession that are referenced in your
9 C.V.?

10 A. No, I had --

11 MR. HOLFORD: These are what he
12 found.

13 MR. McELVEEN: All right.

14 A. I've had a bad accident happened to
15 these. I left them in my boxes I had about --
16 located out at the University of Texas School of
17 Public Health. When I left in '87, went back
18 there for a few weeks later to pick them up when
19 I had time and every one of the boxes was still
20 up in the -- over the bookcase, but every
21 document had been taken out.

22 I don't know who had the key. I got
23 in that and took them away, but there wasn't any
24 of my past information left in there. And as you
25 see from my -- you see it was quite a list.

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2 BY MR. McELVEEN:

3 Q. Oh, yes, sir. Yes, sir. And so,
4 No. 11 suffered that same fate, I guess, as
5 No. 10 would have?

6 A. All of them that are listed here.

7 Q. Oh, okay.

8 A. All of them that are listed.

9 Q. All right, sir. When you -- your
10 C.V. mentions certain things about --

11 MR. HOLFORD: Mr. McElveen, let
12 me -- hold on. He -- somewhere in one of these,
13 probably, we should turn these over to you.

14 MR. McELVEEN: Okay. The --

15 THE WITNESS: They're -- yeah, with
16 that other attachment supplement that he has over
17 there.

18 MR. HOLFORD: Okay.

19 MR. McELVEEN: These items that I
20 just received for the record are the nineteen --
21 are the three books, Threshold Limit Values, from
22 the ACGIH '90 - '91, '92 - '93 and '93 - '94,
23 1993 - 1994.

24 BY MR. McELVEEN:

25 Q. All right, sir. And other than the

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2 items which we have just exchanged, as it were,
3 is there anything else that you have brought that
4 you believe is responsive to this?

5 A. Not available.

6 Q. All right, sir. Let me show you, if
7 I may, an item which we have marked as Exhibit
8 No. 2.

9 (Witness confers with counsel.)

10 A. Let me ask you, do you have a copy
11 of all of the publications attached to any of
12 your --

13 BY MR. McELVEEN:

14 Q. Professor, I didn't have anything
15 that had your publications on it that was
16 appended to the curriculum vitae. Although, I
17 have seen a list of your publications somewhere.

18 MR. HOLFORD: Yes, the list, yes,
19 they have. Yes, the list.

20 THE WITNESS: I want to make sure
21 they had that.

22 BY MR. McELVEEN:

23 Q. And I understand that -- that your
24 C.V. would ordinarily contain your list of
25 publications as well, correct?

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2 A. Yes.

3 Q. Okay. Right. All right. But with
4 that exception, this does represent your current
5 C.V.?

6 A. It is.

7 Q. Okay. So that's No. 2.

8 MR. McELVEEN: Counsel, can we go
9 off the record one second for a procedural
10 matter?

11 MR. HOLFORD: Sure.

12 (Discussion off the record.)

13 MR. McELVEEN: Professor Hammond, I'm
14 going to ask the court reporter to mark one
15 further item as an exhibit next in order.

16 (Hammond Exhibit No. 3
17 marked for identification.)

18 BY MR. McELVEEN:

19 Q. Professor Hammond, I'm going to show
20 you a document which I believe to be complete.
21 It's a copy, but I believe it's a complete copy
22 of the T -- the ACGIH, TLV value book for the
23 year in which you served on that TLV committee or
24 for, I guess, the first year you served on it.
25 And your name is right in the front there of the

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2 book. I've turned some pages down that I wanted
3 to ask you some questions about.

4 A. That's good. Yes. I was the --
5 elected to the membership of this first year that
6 I was eligible.

7 Q. All right, sir.

8 A. '79.

9 Q. Professor, I understand we may have
10 some extra copies of this and if I do, I want to
11 give you one to be looking at while I'm looking
12 at it because I don't want to read anything out
13 of context.

14 While we're looking for that, let me
15 just show you the first page I wanted to ask you
16 something about, Professor, and that is the list
17 of people who were on that committee. You
18 mentioned to me that people who served with
19 industry were entitled to be only consultants as
20 to the TLVs; is that correct?

21 A. That's correct, for these particular
22 days.

23 Q. All right, sir. And, indeed, I
24 believe you indicated that you were not able to
25 be on the TLV committee in prior years because of

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2 your employment with Exxon, correct?

3 A. That is correct.

4 Q. Okay. There are a list of
5 consultants that are listed on that page, and I'm
6 just wondering if you recall whether any of those
7 consultants had corporate affiliations at that
8 time?

9 A. I recognize James Morgan,
10 M-O-R-G-A-N.

11 Q. For whom was he working or with whom
12 was he affiliated?

13 A. DuPont Corporation.

14 Q. Okay. DuPont.

15 A. And Theodore R. Torkelson,
16 T-O-R-K-E-L-S-O-N, and Dr. Torkelson was with Dow
17 Chemical.

18 Q. All right, sir.

19 A. The other members were a consultant
20 and Mitchell Zavon was in a consulting capacity
21 to several companies and all across was
22 associated with the Mellon Institute.

23 Q. With the Mellon Institute you say?

24 A. The Mellon Institute in Pittsburgh.

25 Q. Okay.

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2 A. And the M.D. was a Canadian and he
3 was with the Federal government up in Canada.

4 Q. And what was his name, again, I'm
5 sorry, just for record purposes?

6 A. Mastrom --

7 Q. Oh, Mastrom --

8 A. A-T-T-E-O, M-A-S-T-R-O-M-A-T-T-E-O,
9 M.D.

10 Q. All right, sir. Now, with respect
11 to the process by which the TLVs were being set
12 on your tenure on the committee, what was the
13 approach that was taken?

14 Obviously, you had a set of TLVs
15 already in place by 1979, the ACGIH did. Did you
16 just look at certain compounds that had more
17 recently developed evidence on them or how --
18 what was your approach to setting TLVs?

19 A. We had background history of that
20 TLV committee started back in 1946 and they
21 published the first listing and that was made up
22 of consulting group volunteers with states and
23 cities and schools. Then it had been continued
24 annually and published since 1946 through 1970
25 and on through 1993.

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2 Q. All right, sir. And so, when you
3 were on the committee, were -- and I'm not going
4 to ask you for specific ones, but were a number
5 of TLVs looked at for purposes of determining
6 whether they should be changed?

7 A. Yes, there was, in the range of 50
8 or 60 a year at that time.

9 Q. All right, sir. And what type --
10 did somebody get up and give a presentation on
11 here's the material. Here's what we know about
12 it. Here's the proposal, that type of thing?

13 A. In a few cases, the committee
14 invited someone to come in for the purpose of
15 explaining it to and what changes should be
16 made. But most of the time it was by written
17 correspondence and the committees developed it
18 from presentation of NIOSH, OSHA or some other
19 group that had original information.

20 Q. All right, sir. You had come on to
21 that committee yourself as a person who had just
22 completed a career of work with the Exxon
23 Corporation. Were there other people on the
24 committee itself who had previously worked for
25 industry, do you remember? And if you want to

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2 take --

3 A. Well, as I told you, they were still
4 working but on the committee itself -- not to my
5 knowledge.

6 Q. All right.

7 A. I was the first member from the
8 industry.

9 Q. All right, sir. We haven't been
10 able to find an extra copy. So, what I'd like to
11 do is, with your permission, show you this, but
12 sort of stand behind you while I read it into the
13 record?

14 A. Surely.

15 MR. McELVEEN: Is that permissible,
16 Counsel?

17 MR. HOLFORD: Yes.

18 BY MR. McELVEEN:

19 Q. Okay. Doctor, I want to turn with
20 you to the first page, the preface page of
21 Exhibit 3 and I want to read into the record the
22 first paragraph and I'll ask you to comment on it
23 very briefly.

24 (Reading) Threshold Limit Values
25 refer to airborne concentrations of substances

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2 and represent conditions under which it is
3 believed that nearly all workers may be
4 repeatedly exposed day after day without adverse
5 effect. Because of wide variation in individual
6 susceptibility, however, a small percentage of
7 workers may experience discomfort from some
8 substances at concentrations at or below the
9 threshold limit; a smaller percentage may be
10 affected more seriously by aggravation of a
11 pre-existing condition or by development of an
12 occupational disease.

13 I assume that among the other things
14 that you did was to sign off on the preface of
15 that addition, was it not? I mean, you agreed
16 with that basic fundamental tenet.

17 MR. HOLFORD: One small point,
18 Mr. McElveen, the last word you read "disease,"
19 and it's the word illness.

20 MR. McELVEEN: I'm sorry,
21 occupational illness. I stand corrected.

22 A. I interpreted that as to being an
23 explanation of the guide, value of the guides.

24 BY MR. McELVEEN:

25 Q. So, you believe, then, and I assume

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2 continue to believe that there are people who by
3 virtue of biological variability might not be
4 protected by Threshold Limit Values in the
5 workplace?

6 A. Could you define that, biological --
7 phrase it a little better.

8 Q. Well, I'm just -- let me use the
9 words that are in the preface here. Because of
10 wide variation in individual susceptible is the
11 term that the guide itself uses and I'm just --
12 was asking, do you believe that TLVs are not
13 protective of all workers?

14 A. Well, there are other features of
15 the individual in his condition or her condition
16 that would have to be taken into consideration
17 and apply it, as I explained earlier, by a
18 qualified industrial hygienist.

19 Q. And so, is it fair to say that these
20 TLVs are useful when looking at populations; but
21 it would be impossible to -- without further
22 information to determine as to a particular
23 individual whether the TLV was completely
24 protective?

25 A. In answer to that, let me give you a

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2 couple of examples where I ran into the TLV
3 being, for example, excessive and that would be
4 exposure sulfur dioxide. Now, some people are
5 really irritated quickly and -- by the
6 concentrations suggested. And another good agent
7 that is common is formaldehyde, and those people
8 are not suitable to work in those conditions that
9 as a limit that are established there.

10 Q. And have those both been in
11 situations from your own personal experience in
12 the workplace?

13 A. That is the reason I cite them.

14 Q. With respect to those individuals,
15 did you recommend that action be taken to remove
16 them from those exposures?

17 A. Oh, yeah, switch them to another job
18 without exposures, make them comfortable.

19 Q. The -- I -- do you agree -- well,
20 let me back up a step.

21 Were the sulfur dioxide and
22 formaldehyde exposure issues that you've just
23 described to me, were they acute exposure
24 problems? In other words, were these people
25 reacting acutely to these exposures?

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2 A. Not as much as they were complaining
3 about the irritant nature of these materials to
4 them in their nose, for example.

5 Q. And you, I assume, through
6 industrial hygiene techniques had determined that
7 the levels to which they were being exposed were
8 within the TLV levels?

9 A. We had.

10 Q. Yes, sir. So, for lack of a better
11 term, I guess you determined that these people
12 were hypersensitive to those compounds and should
13 be moved out of exposure?

14 A. Yes. It would be best to move them
15 out because of their efficiency and comfort.

16 Q. And those, as you say, were two
17 examples of individual susceptible -- or
18 individual susceptibilities as indicated in the
19 first paragraph?

20 A. Yes, those two are good examples.

21 Q. Do you believe that the potential
22 for such individual variability exists in
23 employees with respect to their likelihood of
24 developing cancer from exposure to certain of
25 these materials, or do you have an opinion in

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2 that regard?

3 A. That really is a medical question,
4 but in my experience, the matter of protection
5 for them should be increased or the reduction and
6 the exposure. And I took that into consideration
7 in many of my own individual cases. For
8 example -- I'm glad you asked -- I looked at the
9 situation and I went in and lived with them while
10 I was sampling and when I was evaluating. And if
11 I decided that this particular irritant or this
12 particular exposure, knowing what I did about the
13 bad effects it might produce, was not something
14 I'd be willing to spend 30 or 40 years of my
15 career in, I then made recommendations that this
16 be reduced or controlled.

17 Q. Were those recommendations always
18 followed?

19 A. They were in my company.

20 Q. I take it that sort of getting to
21 the facts of this case, you can't speak for
22 whether those kind of recommendations were made
23 or were followed at Amoco?

24 A. I -- I would not know anything about
25 the local definite condition at Amoco, no.

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2 Q. All right, sir. Let me direct your
3 attention to the first paragraph at the top of
4 Page 4. Again, I'll read it into the record.

5 (Reading) The nature and -- I'm
6 sorry, the amount and nature of the information
7 available for establishing a TLV varies from
8 substance to substance; consequently, the
9 precision of the estimated TLV is also subject to
10 variation and the latest documentation should be
11 consulted in order to assess the extent of the
12 data available for a given substance.

13 Do the TLVs that exist vary quite
14 widely in terms of the documentation that is
15 available to support them?

16 A. These documentations are complete
17 for every substance and they -- new ones issued
18 periodically, not annually, but whenever there's
19 sufficient information available for many sources
20 worldwide that they would be modified and brought
21 in compliance and the values will change in the
22 same way.

23 Q. Is it fair to say that in your
24 experience all TLVs are supported by scientific
25 evidence of some type, whether that be animal

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2 evidence or human evidence?

3 A. Let me -- to add a bit to that and
4 say that the worldwide literature is such every
5 year a relative to these values. We had visits
6 frequently from countries like Germany, Sweden
7 and others that also made the literature
8 available to us, and England, worldwide. And the
9 TLVs were generally adopted by the other nations
10 except the Russians.

11 Q. Who may soon come into line.
12 Professor Hammond, could you tell me whether in
13 your experience a substance would be classified
14 as a human carcinogen under the TLVs if a single
15 epidemiological study came out that said, "We've
16 associated this substance with cancer"?

17 A. I wouldn't be able to answer that.
18 I'd have to know all about that study and the
19 one -- one study in the worldwide may not have
20 enough evidence. It might have enough evidence.

21 Q. Did you, when you were on the
22 committee, address such problems as the one I've
23 just described? In other words, how much
24 evidence is sufficient evidence to move it from a
25 noncarcinogen to a carcinogen?

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2 A. And that's after I became a member
3 of the committee?

4 Q. Yes, sir.

5 A. Some of the materials that were on
6 the list that were potential carcinogens and
7 marked as -- with a 2 were changed while I was
8 there into a 1, which was definite human
9 carcinogen.

10 Q. Do you recall what those substances
11 were?

12 A. Benzene was one.

13 Q. All right, sir.

14 A. And there were several others when
15 we go through. They're listed here, and they're
16 listed by an A1 or A2.

17 Q. And A1 being the human?

18 A. Human.

19 Q. And A2 being?

20 A. Animal.

21 Q. And possibly human?

22 A. Yes.

23 Q. All right. Let me direct your
24 attention to the next paragraph on Page 4.

25 (Reading) The committee holds to the opinion that

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limits on -- I'm sorry, I can hardly read today -- that limits based on physical irritation should be considered no less binding than those based on physical impairment. There is increasing evidence that physical irritation may initiate, promote or accelerate physical impairment through interaction with other chemical or biologic agents.

Now the -- my question to you with respect to that paragraph is: Do you believe that the terms "initiate" and "promote" are used, and those are commonly terms that are talked about in carcinogenesis, do you have an opinion as to whether irritant agents that might be encountered in a workplace might hasten the development of cancer?

A. That's a medical question. I wouldn't be qualified.

Q. All right, sir. You talked a little earlier about what the TLV shouldn't be used for. Let me just read that paragraph into the record and ask you to comment on a portion of it.

(Reading) These limits are intended for use in the practice of industrial hygiene and

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1 should be interpreted and applied only by a
2 person trained in this discipline. They are not
3 intended for use, or for modification for use;
4 one, as a relative index of hazard or toxicity;
5 two, in the evaluation or control of community
6 air pollution nuisances; three, in estimating the
7 toxic potential of continuous, uninterrupted
8 exposures or other extended work periods; four,
9 as proof or disproof of an existing disease or
10 physical condition or; five, for adoption by
11 countries whose working conditions differ from
12 those in the United States of America and where
13 substances and processes differ.
14

15 Doctor -- or excuse me, Professor
16 Hammond, my question to you with respect to this
17 paragraph is: Given that limitation that's set
18 out in the TLV book, do you believe that evidence
19 of TLVs for substances which you looked at in Sam
20 Allgood's workplace should be used to prove or
21 disprove whether his cancer resulted in whole or
22 in part from those exposures?

23 A. No, I saw no materials or substances
24 in his exposure list that would have likely
25 caused the cancer of this larynx.

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2 Q. Well, the reason I asked you the
3 question sort of in that way is I want to make
4 sure that I understand where you sort of get off
5 the train when it comes to medical diagnosis
6 and -- in other words, what -- to what purpose do
7 you think the TLV values can be used in a case
8 such as Mr. Allgood's, an individual case?

9 MR. CRUSE: That answer was
10 nonresponsive, too, I believe. So I'll object to
11 it just since we're doing it under the rules.

12 MR. CALDWELL: Yes.

13 A. I do not know what you're really
14 asking in as far as application for the TLVs in
15 regard to the medical question or whether or not
16 he had cancer.

17 BY MR. McELVEEN:

18 Q. Okay. You -- I take it from what
19 you earlier said that you are offering no opinion
20 at this deposition about what it was that caused
21 or didn't cause Mr. Allgood's cancer, right?

22 A. I did not know enough about his
23 occupation or his habits to be able to contribute
24 anything to that medical.

25 Q. All right, sir. Professor, Hammond,

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2 one of the things that's mentioned in the TLV
3 book is biologic limit values back in 1979 as
4 opposed to Threshold Limit Values. What are
5 biologic limit values?

6 A. Well, biological factors are the --
7 good example would be lead and anyone being
8 exposed to lead would be reflected in their
9 increased blood level and you can use that as a
10 backup for your atmosphere exempling.

11 Q. All right, sir. Are you familiar
12 with the situations in which the atmospheric
13 sampling for lead, let's take lead as an example,
14 atmospheric sampling was at a certain level and
15 yet when you took the blood leads of workers in
16 that area, they varied fairly widely over a
17 spectrum of values?

18 A. In many cases where you might find
19 that where the blood lead or the urine lead would
20 show, you can find out that maybe the employee
21 was -- been moonlighting and doing hazardous
22 exposure from his own shop and you would save him
23 disability and save his illness by pointing that
24 out to him by having these values. Yeah, it's
25 very valuable.

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2 Q. So, in other words, you would -- you
3 would target an individual who had a level that
4 was outside of a range that you would expect to
5 see based on the air leads in the workplace and
6 do some further investigation of that individual
7 to determine what his other exposures might have
8 been?

9 A. That was my practice and in several
10 cases, I detected the exposures he didn't know
11 about or didn't recognize.

12 Q. By virtue of differences in the way
13 people metabolize compounds or other factors,
14 genetic differences, was there a range of values,
15 say, for blood lead even people who had just been
16 exposed to the job?

17 A. That would be a matter of knowing
18 what his history was and how much work he had, a
19 medical history, for example, and I'd leave that
20 up to the physician to point out those,
21 personally.

22 MR. McELVEEN: All right, sir.
23 Professor, let me ask the reporter to mark the
24 exhibit next in order.

25 (Hammond Exhibit No. 4

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2 marked for identification.)

3 BY MR. McELVEEN:

4 Q. Professor Hammond, let me show you
5 an item which I've marked exhibit next in order
6 and ask if you can identify that, sir?

7 A. I do.

8 Q. And what is it?

9 A. It's a letter that I wrote to
10 Mr. Holford and, for which I pointed out after
11 going through the listing of the material
12 Mr. Rogers handling, I found no cause of
13 occupational larynx cancer.

14 MR. CRUSE: Again, that's
15 nonresponsive. We'll object to it.

16 BY MR. McELVEEN:

17 Q. Okay. It is -- it is your report
18 that you gave Mr. Alford right -- I mean
19 Mr. Holford, I'm sorry?

20 A. That is true.

21 Q. And why don't you hold on to that
22 because I do think I have another copy of that
23 somewhere.

24 First of all, Professor, let me ask
25 you this: The letter is dated August 4, 1992,

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2 and approximately how much earlier than that had
3 you originally started consulting with
4 Mr. Holford on this case?

5 A. Within a month.

6 Q. All right, sir. And the first
7 paragraph of your letter says: Our discussion of
8 the Allgood case was very constructive for me; is
9 that correct?

10 A. That's true.

11 Q. All right. Could you tell me, to
12 the best of your recollection, what your
13 discussion with Mr. Holford about the Allgood
14 case amounted to? In other words, what did he
15 say to you, what did you say to him?

16 A. Mainly that he explained this being
17 a report to -- to him in regard to the --
18 Mr. Allgood's experience as he worked for Amoco
19 Oil or whatever company it was, Amoco Chemical
20 Company.

21 Q. All right, sir.

22 A. That's all we discussed.

23 Q. He called up, basically, and said I
24 have a -- identified himself, I take it, as a
25 plaintiff's lawyer for Mr. Allgood --

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2 A. He did.

3 Q. -- and indicated to you he was
4 representing -- did he describe to you the nature
5 of this lawsuit, in other words, that
6 Mr. Allgood's widow and sons were suing the
7 tobacco companies and so forth?

8 A. I don't recall any details of that
9 type that we had.

10 Q. All right. He did indicate to you,
11 did he, that Mr. Allgood had had a larynx cancer,
12 right?

13 A. That was the understanding, yes, I
14 remembered that.

15 Q. Okay.

16 A. And he gave me this list to review.

17 Q. Did he ask you if you could take a
18 look at a list that had been provided to him and
19 give him certain information as to whether any of
20 these substances were larynx carcinogens or not?

21 A. He did.

22 Q. Okay. And so, with that
23 understanding, you took on the representation, I
24 guess, right, or took on the job?

25 A. To search literature and information

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2 for the -- information on each individual
3 substance it listed there, yes, I did.

4 Q. All right, sir. And to your
5 recollection, was anything else discussed in that
6 initial conversation with Mr. Holford?

7 A. I don't recall any other matter that
8 was brought up.

9 Q. All right. Did you discuss your fee
10 arrangement with him at that time, do you
11 remember?

12 A. Yes, I did.

13 Q. Okay.

14 A. I did.

15 Q. And so, is it correct to say that at
16 the conclusion of that conversation, you said,
17 "Send me the letter and I'll institute a search"
18 or something to that effect?

19 A. On I think that maybe he brought the
20 letter along with him, a copy of the letter.

21 Q. Okay. So was this a face-to-face
22 meeting, then, we're talking about in that first
23 paragraph?

24 A. It was.

25 Q. Okay. Did you meet with Mr. Holford

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2 more than one time before you initiated your
3 search?

4 A. Only one time.

5 Q. All right, sir. And so, at the
6 initial meeting, you had looked at the letter
7 from, I guess, it's Ms. Jones -- Ms. Roger -- I'm
8 sorry?

9 MR. HOLFORD: Mr. Rogers.

10 BY MR. McELVEEN:

11 Q. Mr. Rogers, Mr. J.T. Rogers from the
12 Amoco Chemical Company, Amoco Corporation, I'm
13 sorry. Mr. Holford showed you that letter at the
14 first meeting, you recall?

15 A. I believe that was the way he
16 represented to me was the first meeting. We had
17 a meeting and I think he had that letter with him
18 and he left it with me.

19 Q. All right, sir. Is it fair to say
20 that whatever services you have billed
21 Mr. Holford for have been billed in accordance
22 with the schedule that you earlier set out, \$200
23 for consulting with lawyers, \$100 for searching
24 literature per hour?

25 A. That is true.

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2 MR. McELVEEN: Okay. Let me ask --
3 just one second.

4 Let me ask the reporter to mark an
5 item next in order, No. 5.

6 (Hammond Exhibit No. 5
7 marked for identification.)

8 BY MR. McELVEEN:

9 Q. And Professor, let me show you the
10 item which I have had marked as the exhibit next
11 in order. I believe that that represents your
12 copy of the letter from Mr. Rogers at Amoco. Are
13 those -- but let me ask you specifically, there's
14 some penciled markings on that letter. Are those
15 your markings?

16 A. Yes, they were.

17 Q. All right, sir. Professor, before
18 we begin talk about that list and about your
19 opinion, let me ask you a few preliminary
20 questions, if I may. Did you ever know Sam
21 Allgood?

22 A. No, I did not.

23 Q. Okay. Did you, in the course of
24 your representation -- or your work in this case
25 as an expert witness, talk to his widow?

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2 A. No, I never did.

3 Q. Did you ever talk to any of his
4 children?

5 A. No, I never did.

6 Q. Did you ever talk to any of his
7 coworkers at Amoco?

8 A. No, I did not.

9 Q. Did you ever review any of the
10 depositions, and I think he may only have given
11 one, that Mr. Allgood ever gave in a court case?
12 In other words, have you ever looked back at Sam
13 Allgood's deposition in any other case?

14 A. I don't recall that I've ever seen
15 it.

16 Q. Okay. Have you ever reviewed any
17 depositions of any family members in this case --

18 A. No.

19 Q. -- any involving his family members?

20 A. No, I haven't.

21 Q. Have you ever reviewed any
22 depositions of any of his coworkers in this case?

23 A. No, I have not.

24 Q. Have you ever been in the Amoco
25 chemicals plant in Texas City?

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2 A. No.

3 Q. I take it, though, that as a -- by
4 virtue of your work and previous experience you
5 know where that plant is, don't you?

6 A. I do.

7 Q. Okay. Did you ever look at any
8 exposure information that would have been
9 generated for Mr. Allgood -- that might have been
10 generated for Mr. Allgood under the medical --
11 OSHA's medical records access --

12 A. No.

13 Q. -- act?

14 Have you, in fact, during the course
15 of your career either at Exxon or in teaching
16 ever looked at exposure information that has been
17 generated under OSHA's medical record access
18 standard?

19 A. I don't recall any.

20 Q. Okay. You understand, though, what
21 I'm talking about when I talk about the exposure
22 information, the medical record access standard,
23 OSHA Section 1910.20?

24 A. Only my own company's records and
25 exposures of employees. I don't recall outside

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2 examination of anyone else's data.

3 Q. Okay. But you're aware that with
4 respect to certain exposure measurements and also
5 with regard to employee medical records, OSHA has
6 requirements that employers retain certain of
7 those records and make them available to
8 employees or their representatives?

9 A. For certain substances, yes, I do.

10 Q. Did you ever look at Sam Allgood's
11 medical chart from Amoco Chemical?

12 A. No.

13 Q. Did you ever look at any job
14 description that he ever gave?

15 A. No, I did not.

16 Q. Did you ever review any reports of
17 any spills or releases that had occurred at the
18 Amoco Chemical Company that would have been
19 reported to the Texas Air Control Board or the
20 E.P.A.?

21 A. No, I have not.

22 Q. All right, sir. Did you ever look
23 at potential exposures that Allgood might have
24 had at the work but which were not listed in the
25 Jones letter, which is -- or I'm sorry, the

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2 Rogers letter, which is Exhibit 5?

3 A. No, I have not.

4 Q. All right. Have you ever reviewed
5 any lists of chemicals at the Amoco chemical
6 plant that may have been filed with the E.P.A. or
7 the local emergency planning authorities or the
8 fire department?

9 A. No, I haven't.

10 Q. Have you ever looked at any M.S.D.s
11 for Amoco chemicals -- chemicals?

12 A. I don't recall that I ever saw any
13 of that particular lists.

14 Q. Okay. Are you familiar with -- with
15 the E.P.A. Form R under the Serra Amendments of
16 1986, the super fundamentals, Form R that the
17 E.P.A. requires in some circumstances?

18 A. On a -- in a very casual way. I
19 don't remember any details about it.

20 Q. And you've looked at no Form Rs for
21 Amoco chemicals, right?

22 A. No, I have not.

23 Q. Did you ever look at or examine
24 Mr. Allgood's exposures or potential exposures
25 that he may have had to chemicals in the

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2 military?

3 A. No, I had not.

4 Q. All right. Do you know what he did
5 in the military?

6 A. No.

7 Q. Have you ever examined any exposures
8 that he might have had as a painter? There was
9 some indications that he did some painting early
10 in his life. Did you ever look at any of those
11 exposures?

12 A. No.

13 Q. Okay. Have you ever examined any
14 information with regard to chemicals or levels of
15 exposure that he may have had at the Sperry Rand
16 Louisiana Army ammunition plant that he worked at
17 for a period of time?

18 A. No, I didn't.

19 MR. HOLFORD: At this point, I'd
20 like to lay an objection that Professor Hammond
21 has been tendered for his looking at the list of
22 chemicals put in J.T. Rogers' letter and
23 declaring whether or not any of those were causes
24 of occupational larynx cancer. I believe counsel
25 is going into matters that are far beyond that

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2 tender and that's it.

3 MR. CALDWELL: Objection overruled.

4 (Laughter.)

5 MR. HOLFORD: Object to sidebar.

6 MR. McELVEEN: I will say,
7 Professor, that I actually only had two more
8 questions. If I can ask those, we can take a
9 break.

10 MR. HOLFORD: All right.

11 BY MR. McELVEEN:

12 Q. And finally, doctor -- Professor
13 Hammond, is it correct that you have not examined
14 any exposures or chemicals to which Mr. Allgood
15 may have been exposed to away from work such as
16 his life-style activities or his hobbies?

17 A. I have not.

18 Q. Okay. Thank you, sir.

19 MR. McELVEEN: Again, we've been
20 about an hour on the record. Do you want to take
21 a break at this point in time? Why don't we go
22 off the record.

23 (The deposition of JAMES W. HAMMOND,
24 SR. was adjourned at 12:07 p.m. for a luncheon
25 recess.)

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1 JAMES W. HAMMOND, SR.

2 APPEARANCES OF COUNSEL:

3

4 (P.M. SESSION)

5

6 JUNIUS C. McELVEEN, JR., ESQ.

7 PETER J. BIERSTEKER, ESQ.

8 THOMAS E. RILEY, ESQ.

9 SAM W. CRUSE, JR., ESQ.

10 ALDEN D. HOLFORD, ESQ.

11

12

13 REPORTED BY:

14

15 ANN M. PLAINOS, CSR

16

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1 JAMES W. HAMMOND, SR.

2 (The deposition of JAMES W. HAMMOND,
3 SR. was resumed at 1:15 p.m.)

4

5 JAMES W. HAMMOND, SR.

6 having been previously duly sworn, testified
7 further as follows:

8

9 EXAMINATION CONTINUED

10 MR. HOLFORD: Okay. Two more
11 documents from Professor Hammond; one is an item
12 that I just got stuck in my briefcase called
13 A.P.I. Assignments, James W. Hammond 1947 to
14 1965, two pages.

15 MR. McELVEEN: Okay.

16 MR. HOLFORD: The other is a single
17 page letter which I -- I suppose it's back in my
18 office. I -- it was shown to me and so I believe
19 it comes under your duces tecum. It's a letter
20 from Professor Hammond to a Dr. Wrightman?

21 THE WITNESS: Mr. Wrightman.

22 MR. HOLFORD: Oh, Mr. Wrightman.

23 THE WITNESS: He's a pipeline
24 superintendent.

25 MR. HOLFORD: Okay. And I'll be

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2 glad to fax -- nobody local left.

3 MR. RILEY: Sam will be back.

4 MR. HOLFORD: Sam will be back.

5 Okay. Fax Sam a copy of it as soon as I get back
6 to my office; but for purposes here, what was the
7 date? You know, go ahead and tell them.

8 A. Well, what it was was a letter
9 addressed to him and it's one month in '53 and it
10 reminded him that in the year of 1948 we had met
11 with the director of safety and all agreed we
12 wouldn't use any benzene in our operations,
13 unless we had a record of all the places it was
14 being used and that these men or employees were
15 under medical surveyance. That was it in
16 content. And that anything more than zero was
17 considered a dangerous exposure.

18 BY MR. McELVEEN:

19 Q. And this was written in 1953, you
20 say?

21 A. Yeah. And it talked about our
22 conference that we held in 1948 and I went up to
23 a nice lady in Wyoming field operation who I
24 found that they were using it for separation of
25 water and oil and using an A.P.I. method that

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2 called for benzene, but then I pointed out to
3 them that we didn't -- Humble did not use any
4 benzene without there being any medical
5 surveyance. And all the workers had had
6 potential use of it.

7 Q. Okay. And Mr. Wrightman was an
8 employee of Humble also in the pipeline
9 operations?

10 A. Yes, he was. He was a manager or
11 superintendent of the pipeline company.

12 Q. Now, when you -- did you in that
13 letter, since we don't have it in front of us
14 here, I'm going to ask you: Did you use the term
15 "dangerous" when you referred to benzene in that
16 letter?

17 A. I used the word hazardous.

18 Q. Hazardous. And what did you mean by
19 that use?

20 A. I meant any exposure to benzene
21 would deserve to be and needed to be under
22 medical supervision of those employees that may
23 be using it.

24 Q. Did you -- when you used that term
25 "hazardous," did you mean it might cause cancer

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2 or was that not known?

3 A. Yes, it was well known it would
4 cause cancer. And I had been familiar with that
5 in correlation between leukemia and benzene since
6 1941, very definitely. Worked with both sides of
7 the fence on that, that is, the medical and
8 investigation and also the plant measurements and
9 concentrations that these employees have had
10 problems had been previously exposed to. So, we
11 correlated -- and that's all in the Hunter report
12 of 1959 -- '39 where he discussed some dozen
13 cases or so and leukemia was his finding.

14 And he drew the conclusion also in
15 his article you'll find that any concentration
16 based on our field work and his findings in the
17 medical was the dangerous, as far as hazardous,
18 and there was no satisfactory TLV to be
19 considered the ultimate safety above zero.

20 Q. Did you, yourself, subscribe to that
21 view in 1953?

22 A. I did that. And I also did -- after
23 1941.

24 Q. All right, sir.

25 A. When I --

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2 Q. I'm sorry, go ahead and finish your
3 answer.

4 A. When I had had the experience of
5 working along with the people there in the
6 Division of Occupational Diseases in the State of
7 Massachusetts.

8 Q. However, despite that, of course,
9 the ACGIH kept -- I mean, their -- their level of
10 permissible exposure was above zero. The ACGIH
11 during that time frame did not say people should
12 not use benzene in their work, did it?

13 A. And that persisted in there even
14 though I always voted against it. They had a TLV
15 limit down to ten parts per million until this
16 year, and this year they lowered it down to
17 one-tenth of a parts per million, 0.1 which is
18 approaching my level since 1942.

19 Q. Now, in 1953, was .1 parts per
20 million measurable by the equipment that was then
21 in existence?

22 A. That would be the lowest detectable
23 level that we had methods of doing that. We
24 could pass a large enough volume of air through
25 activated charcoal and then extract it off that,

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2 we could measure down to about one or one half to
3 one accurately.

4 Q. Parts per million?

5 A. Parts per million.

6 Q. And that was in '53?

7 A. Yes, in '53.

8 Q. Okay.

9 A. But it wasn't a matter of whether
10 they were exposed to half a parts per million
11 one, but any exposure at all then required
12 medical surveyance of the people, whether they be
13 periodically checked for blood changes and blood
14 picture and so forth. And that would occur and
15 they'd have to be on record as being under the
16 medical program.

17 Q. In that monitoring program?

18 A. In that monitoring program medically
19 as well as air sampling.

20 Q. And was that, again, from your
21 experience -- based on your experience at Exxon
22 only. I mean, you don't know whether any other
23 companies implemented such a program?

24 A. I'm not familiar with other
25 companies. However, let me mention that in 1947,

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2 we had Drinker and his Harvard group in the field
3 of industrial hygiene including Dr. Clifton -- or
4 Clinton to make a worldwide survey, and he in
5 that A.P.I. documentation to us on benzene stated
6 the basic -- basically, I'm giving you that any
7 exposure to benzene was hazardous and it should
8 be zero. Anything above zero, is the way he put
9 it, was hazardous.

10 Q. Did he -- but when you use
11 "hazardous" in that sense, are you saying that
12 he was saying back in that time frame that any
13 level above zero could cause cancer or that it
14 just --

15 A. He mentioned cancer as the
16 ultimate --

17 Q. End point?

18 A. -- disease. So, he -- yes, cancer
19 was discussed definitely. Leukemia was discussed
20 definitely in that article.

21 Q. But to your recollection, was it his
22 opinion that any level above zero could cause
23 leukemia?

24 A. And that's what was stated in that
25 documentation that they provided the members of

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2 the A.P.I. in 1947.

3 Q. Do you believe that that --

4 A. '48.

5 Q. -- that that concept holds true with
6 respect to any carcinogen, not just benzene
7 alone?

8 A. No, I don't know of any other
9 insidious material that serves oh -- that is so
10 dangerous that you couldn't detect it. There was
11 some complaint or some physical properties of it
12 that you would be warned that you might be
13 exposed, but benzene is so insidious that it
14 could be rather enjoyed at a very dangerous
15 concentration, by people, so far as the odor and
16 so forth.

17 Q. Right. Right. But, I think my
18 question was more directed towards -- you seem to
19 be saying that that this view that was expressed
20 with respect to benzene was that benzene was a
21 carcinogen, a human carcinogen, caused leukemia
22 and that it could cause leukemia at any dose
23 above zero. I mean, was that your -- is that
24 what you understood this man to be saying?

25 A. Yes, I do --

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2 Q. Okay.

3 A. -- to interpret it.

4 Q. And my only question to you is --
5 and furthermore, I think you said you believed
6 that. You believe what he was saying about that,
7 right?

8 A. I held to that, as I said, since
9 1942 and on through to nineteen -- to 1993.

10 Q. All right, sir. And my only
11 question is: Do you believe that that -- that
12 that property, that is, that a substance which is
13 a human carcinogen can be carcinogenic at any
14 dose above zero holds true for substances other
15 than benzene?

16 A. I don't have an opinion on what
17 other substances, it might not apply. Only I'm
18 speaking specifically of my experience with
19 handling of benzene problems.

20 Q. Tell me, if you would, why you
21 showed that letter to Mr. Holford. In other
22 words, it was a letter written in 1953. You
23 mentioned that you had showed it to him and that
24 he thought he had a copy in his office. Why did
25 you show him that particular letter?

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2 A. Particularly, it would show him that
3 my current opinion about it being hazardous above
4 zero was not new to me. It was well established,
5 as I show in that correspondence, going back --
6 we're referring to our conferences in 1948 and
7 I've held to that --

8 Q. -- view since then, I believe.

9 Doctor -- or excuse me, Professor
10 Hammond, we went over this a little bit before
11 lunch; but I'll go back because I want to just
12 complete the cycle here.

13 What did you -- what was your
14 mission, as it were, or what were you asked to do
15 by Mr. Holford for this case?

16 A. Only to look over that list that we
17 did and to see if I saw anything in that list
18 that would be declared as a carcinogenic agent
19 and -- and as I did and I searched the literature
20 and the A.P.I. documentation and so forth, but
21 only the one product, the benzene was the
22 substance that would be hazardous and got to the
23 carcinogenic nature or cancer.

24 Q. All right, sir. When you say you
25 were asked to look at the list here, did he --

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2 did Mr. Holford set out -- well, first of all,
3 let me -- let me -- from what you said before
4 lunch and what you've just said, I take it that
5 the items that are now listed on Exhibit --

6 MR. McELVEEN: What's the number of
7 that, 5, the letter?

8 MR. HOLFORD: 5. Exhibit 5, you
9 marked the letter.

10 BY MR. McELVEEN:

11 Q. Exhibit 5, that's the only items
12 you've looked at, correct?

13 A. The only list of materials I had
14 that were provided by Mr. Rogers and in return,
15 I've said on August the 4th, 1992: On
16 examination of the list of chemicals in
17 Mr. Rogers' letter of June 17, 1991, I find no
18 substance that has been cause of occupational
19 cancer -- let me qualify, cause of
20 occupational -- I can't read my own writing --
21 larynx cancer.

22 Q. Okay. And the -- the first question
23 I have is -- was: Did you understand your charge
24 to be that you were looking for any substance
25 that had been identified as an occupational

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2 carcinogen, as an occupational carcinogen for any
3 organ? Is that -- is that why you had originally
4 put occupational carcinogen because you were
5 looking for any cancer in any site, I guess, is
6 the best way to put it?

7 A. Yes. I looked at -- I looked at
8 lists to see if they were found to be
9 carcinogenic or cocarcinogenic and any of the
10 literature on the occupational --

11 Q. Exposure?

12 A. -- field that I had written.

13 Q. Okay. And the -- when you received
14 that charter from Mr. Holford, would you describe
15 for me and for the record what documents you
16 looked at in order to make your opinion, make
17 your determination?

18 A. My request from Mr. Holford was "Are
19 you an expert in this field?" And then "Are
20 you -- "any of the listed chemicals able to cause
21 laryngeal cancer?"

22 Q. Now, but before we go on, you're
23 reading from something there. What is it you're
24 reading from?

25 A. Well, from a request you asked me

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2 what he asked me to do.

3 Q. Okay.

4 A. And this is what he asked me to do.

5 Q. Okay. And is that in your
6 handwriting or Mr. Holford's handwriting?

7 A. It's in his handwriting, but it was
8 in my file that I --

9 Q. Okay.

10 A. And as a result of that, I wrote the
11 letter of August the 14th.

12 Q. Right. I understand.

13 MR. McELVEEN: Okay. Well, since it
14 was in your file, I guess that's another document
15 that we'll mark as an exhibit.

16 MR. HOLFORD: No. No. I got it out
17 of the papers in the bunch that's --

18 MR. McELVEEN: Oh, it's already in
19 there?

20 MR. HOLFORD: Yeah.

21 MR. McELVEEN: Okay. Okay. That's
22 fine. All right. So that's -- yeah, why don't
23 we just mark that as No. 6, then.

24 (Hammond Exhibit No. 6
25 marked for identification.)

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2 (Discussion off the record.)

3 BY MR. McELVEEN:

4 Q. Now, Professor Hammond, we've had
5 marked as an exhibit what you've just been
6 reading from; is that correct?

7 A. That's correct.

8 Q. And the handwriting on this, I
9 believe, is not yours, right?

10 A. No, it's not mine.

11 Q. It's Mr. Holford's, right, to your
12 knowledge?

13 A. Yes, it was. He gave it to me the
14 first and only time we met.

15 Q. Okay. And that was approximately
16 one month before this August 4th, 1992 date? You
17 had said that --

18 A. It doesn't have a date on it.

19 Q. It is not dated, sir, no.

20 A. It was within that time of a month
21 before August the 14th. I don't remember if it
22 was two weeks or --

23 Q. All right, sir.

24 A. -- or ten days or what it was.

25 Q. Okay. And so, when you got this

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2 request from Mr. Holford -- and as you phrased it
3 and reading from the document -- "Are any of the
4 listed chemicals able to cause larynx
5 cancer?" -- what material did you look at in
6 order to make that determination, if you can
7 remember and list for me the different types of
8 data that you looked at?

9 A. Well, because it was a chemical
10 laboratory where he says he was working as a
11 technician, I looked in the occupational
12 classification under the American Conference of
13 Governmental Industrial Hygienists and handbook
14 of TLVs as well as in the biological testing
15 portion of the handbook.

16 I looked at all the documentations
17 that we might have for any of those -- these
18 materials, and that was in the documentation
19 prepared to substantiate the TLVs that were
20 expressed in the handbook.

21 Q. Now --

22 A. And that covered, particularly
23 looking for cancer and I didn't find any of them.

24 Q. All right, sir. Now, of the three
25 handbooks that you've handed me earlier in

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2 response to the subpoena for the deposition,
3 which one of those were you using to look these
4 up in?

5 A. At that time -- I looked at both of
6 these. But at that particular time, this was the
7 last -- the latest, that was a year ago, that had
8 been published; and this one just came out in
9 this year for '93 - '94.

10 Q. Okay. Now, let me just --

11 A. But I looked at this one.

12 Q. Okay. For the record purposes
13 there, you looked at the yellow-backed book which
14 is 1990 and '91, but your main focus was the sort
15 of the beige book 1992 - 1993 TLVs, right?

16 A. That's right.

17 Q. And at the time, the green book,
18 1993 - 1994, had not yet come out?

19 A. That's right.

20 Q. Okay.

21 A. At that time.

22 Q. Now, if I were to -- and let me get
23 one further piece of information. You looked at
24 both the Threshold Limit Values and the
25 biological exposure indices part of this book for

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2 these compounds?

3 A. I did and the documentations for
4 these materials that are listed here.

5 Q. All right, sir. Now, when you look
6 up an item under the TLVs, you look up the name,
7 I guess. Where do you find the documentations
8 for these items? Are they also in this book?

9 A. They are not in this book. The
10 documentations would be that they are in a big
11 manual that is -- well, as fully thick as the
12 bottom of this case.

13 Q. Okay. So --

14 A. And it would be -- well, some of
15 them have as many as five pages of explanation
16 and histories.

17 Q. And that is a -- that document of
18 documentations is a document that you own and --

19 A. I do.

20 Q. -- you have?

21 A. And fortunately for me, they keep it
22 up to date. When they make any changes in the
23 occupation, even though I have one that I
24 acquired originally back five years ago, they
25 also send me the new modification to replace my

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2 older book.

3 Q. Okay. And so that documentation
4 book is in your possession?

5 A. It is.

6 Q. Okay. You didn't bring it today,
7 though, I take it?

8 A. No, I didn't.

9 Q. Okay. Did you look at anything else
10 besides the TLV book and the documentations for
11 those items?

12 A. Some of the references in the
13 documentation were available to me and I looked
14 at those, but there wasn't any significant -- I
15 mean, I didn't find any other significant.
16 Because I realized from the experience I've had
17 with the TLV committee, that this search goes on
18 for the documentation is not only in English, but
19 in all of the major languages examples such as
20 German and French and Sweden and Japan. They're
21 all -- they all have been reviewed, these
22 documents.

23 Q. And when they come before the TLV
24 committee, I take it that somebody translates the
25 particular article so the TLV committee has the

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2 ability to look at it in English?

3 A. Yes. Most of that work is done by
4 the NIH -- National Institute of Industrial
5 Hygiene, you know, NIGH, which is the Public
6 Health Service section of OSHA.

7 Q. All right, sir.

8 A. And also, I looked at some of the
9 documentation from OSHA itself, be any
10 significant differences between OSHA and -- and
11 the TLV committee.

12 Q. And so, do you recall with
13 specificity which of these items you looked at
14 that you looked beyond the documentation at?

15 A. Oh, I was interested in what
16 products that might be in the pipe still
17 products, that feeds the products in residue. I
18 looked at specific materials that were both in
19 here and from my own experience that I knew that
20 were being produced in the chemical plant at
21 Amoco.

22 Q. Okay.

23 A. So, that was an example of my
24 looking for that.

25 Q. All right, sir. Now the -- so, let

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2 me see if I can summarize. You looked at the TLV
3 book. You looked at the documentation in support
4 of the TLV values in your own documentation
5 notebook.

6 A. That's right.

7 Q. For some of these items, you looked
8 at backup articles that might be cited in the
9 documentation and which you otherwise had, right?

10 A. I had most of them, yes, sir.

11 Q. Oh, okay. You didn't actually go to
12 a library or anything and get ones you didn't
13 have, right?

14 A. No, I didn't do that because I had
15 no purpose of going -- knowing how thorough they
16 are in the documentation to cover all the
17 literature, I would have only gone there had I
18 not known the nature of the problem that was
19 mentioned here, in the benzene, for example.

20 Q. Okay. And then for a few items you
21 went and looked at OSHA documentation. Do I take
22 it that you looked at the OSHA standard on some
23 of these?

24 A. Yes, I have a list of the OSHA
25 standard. And in general, they are the same

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2 standards that are in here. But then a few
3 cases, they've changed -- or a few cases the
4 law -- the courts have required them to change
5 back and so I'm familiar with those.

6 Q. Okay. And, in fact, the OSHA
7 project to modify some of their permissible
8 exposure limits, are you familiar with the case
9 that recently held that they couldn't do that and
10 that they had to go back to the 1971 values on
11 some of those?

12 A. I'm familiar with that.

13 Q. Okay. And so, with respect to a lot
14 of the air contaminant level standards that OSHA
15 has, the ones that are in '71 are still in force,
16 right, in effect?

17 A. The ones that OSHA adopted when they
18 first came into existence are the ones they had
19 to go back to.

20 Q. Right. And so, if the ACGIH adopted
21 lower standards, the OSHA standards would still
22 control the workplace, right.

23 A. It's the only, yeah, standard that
24 can be enforced by law.

25 Q. Okay. And in some of those cases,

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2 the OSHA standard is -- allows a higher
3 permissible exposure than the ACGIH does, right?
4 Because the ACGIH sort of does it continuously
5 and OSHA still has got the '71 standards in
6 place?

7 A. They correspond with the exception
8 of about 16 materials. They at the time
9 corresponded to what was the official listing in
10 the TLV booklet.

11 Q. Okay. And that's the most recent
12 TLV booklet, the ninety --

13 A. '93 - '94.

14 Q. Okay.

15 A. This is only about a month old.

16 Q. Okay. Having done -- and so, in
17 some cases, you looked at the OSHA thing. Did
18 you look at anything else besides the things that
19 we've talked about?

20 A. I had available to me materials on
21 some of the chemical -- not chemical as much as
22 there would be the petroleum products, some gas
23 and oil and produced in a refinery, and they
24 would be under the information I have had to look
25 through to see if there was anything different on

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2 the publications dealing with health matters for
3 certain products that were being produced and fed
4 crude oils and some of the other residue oils.

5 Q. Now, were these in the nature of
6 epidemiological studies or to animal toxicology
7 studies or what?

8 A. Well, mainly, they were on
9 precautionary measures to be taken in handling
10 these materials because they had certain
11 characteristics.

12 Q. Okay. And anything else that you
13 looked at, other than the things you've just
14 listed?

15 A. Not for this -- in answer to this
16 question.

17 Q. Okay. You then, I take it, didn't
18 look at any material safety data sheets for any
19 of these substances?

20 A. I didn't have the material data
21 sheets and those are generally produced under
22 certain directives from the Department of Labor,
23 OSHA, but they were -- they're usually
24 individually developed by the company, depending
25 on -- and I don't know of any national

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2 organization where those are -- they have to
3 comply with certain characteristics that are --
4 and limits that are given by OSHA, but they had
5 quite a personal choice and I didn't see anything
6 from Amoco.

7 Now, we started this practice of
8 putting out material safety data sheets back in
9 the 1950s.

10 Q. And was it your practice to --
11 nowadays, of course, employees are given the
12 right to look at material safety data sheets at
13 the job; and there's a place where they can go
14 look at them under the OSHA rules. Did Exxon do
15 that -- or Humble when you first had those that
16 the employees could go look at them?

17 A. Yes. I think you'd be interested
18 that we've considered the best measures that we
19 could do was to bring these employees that might
20 have an exposure to a hazardous material into a
21 classroom and discuss with them all the
22 characteristics of the material and where they
23 were being produced and how they were being
24 handled. And then what measures we would expect
25 of each employee for protective measures or

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2 protective equipment and medical surveillance.

3 We maybe spent several hours with a
4 class of employees that might have hazardous
5 material they have to handle. We did it with the
6 painters in 1948. And I think the secret of our
7 good program since 1948, we have had no
8 occupational diseases discovered among any of our
9 employees because we educated them right from the
10 beginning, if they are going to be exposed to
11 something and then we got cooperation out of
12 them.

13 We told them everything we knew
14 about the hazardous nature of it, how dangerous
15 it was, whether it was insidious or whether it
16 was latent and they knew as much as we knew when
17 it went out and were exposed and that's the
18 secret of our program.

19 Q. The -- getting back to the issue of
20 what you had looked at with respect to this
21 particular project on Mr. Allgood's case, is what
22 you have described to me everything you've looked
23 at on -- with respect to these chemicals?

24 A. I had no reason to look at other
25 materials.

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2 Q. All right. And do you believe that
3 having looked at what you have looked at, that
4 you have completed the task that Mr. Holford
5 asked you to perform?

6 A. Within the limitations of my
7 capabilities and professional training, I think
8 it was completed pretty well, my individual
9 observations on these -- these materials.

10 Q. All right, sir.

11 A. And answer his questions, as I said
12 here. And I, again, refer back to my -- the
13 limitation that I put on mine that I was looking
14 for.

15 Q. All right, sir. So, within the
16 limitations of your expertise, as you've
17 described it to us here today, you have done
18 everything you believe that is necessary to
19 answer his question?

20 A. I'm -- I'm very -- at this moment, I
21 am, yeah, also very satisfied that I've been
22 comprehensive in my study and that -- that the
23 report that I gave him, condense that it is, is
24 true and accurate.

25 Q. All right, sir. Let me, if I may,

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2 just run down the list, then, with you. So, if
3 you could grab No. 5 there and pull it in front
4 of you.

5 The first item on that list is pipe
6 still products, feed, products, residues. What
7 did you interpret that to mean? I know that a
8 little earlier you had said you had some
9 questions about what that really meant. What did
10 you interpret that to mean?

11 A. Well, I meant that I knew what
12 products that the laboratory would be handling.
13 It came out of certain units and then the
14 refinery. And, therefore, when I looked at the
15 still products, one of the questions that came to
16 my mind, "Would he have been exposed to any
17 hazardous material from the cat-cracker or the
18 pipe seals or the other crackers?"

19 And I looked at the crude in terms
20 of being no particular different than just a
21 variety of crude oils that would go into
22 refinery, and the products there is the light end
23 products that might be produced from the gaseous
24 nature of materials that was heavy as -- lower
25 weight as butane products and is going on up all

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2 the way to the big thick heavy oil by-products.

3 So I looked at all of those in terms
4 of his handling them in a laboratory and I'm
5 familiar with laboratory operations and we had a
6 lot of employees that spent their career in that
7 type of analysis and kept that in mind. And so,
8 I was pretty well satisfied that there wasn't any
9 hazardous material mentioned there.

10 Now, just for example, some
11 refineries, or very few did for a while, produce
12 a polynuclear aromatic compound that was used for
13 weed killing.

14 Q. This is in the pipe still products?

15 A. That would be extracted from the
16 pipe still products, and it might be extracted
17 from the residues in the back, you see.

18 Q. Uh-huh.

19 A. So I looked for the possibility that
20 he would have handled any of those products and I
21 didn't see any and I knew Amoco's knowledge of
22 these factors. And I don't think they ever sold
23 any of the weed killers I had in mind. I never
24 heard about it.

25 Q. Was that a weed killer a cancer

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2 causing agent?

3 A. Skin cancer.

4 Q. Okay.

5 A. It's a P.N.A., polynuclear
6 aromatics.

7 Q. All right.

8 A. And it's like cold tar in its
9 nature, but it was an ^{Exxon} Exxon weed killer.

10 Q. Right. And you determined that he
11 probably would not have had exposure to that
12 substance, right?

13 A. No, because Amoco didn't have a
14 reputation of producing -- or didn't advertise
15 that it was producing that type of product.

16 Q. All right. Did Exxon produce that
17 or Humble in the earlier years?

18 A. We -- under the still products under
19 the cat-crackers, we had a product that we found
20 by animal tests and so forth were too hazardous
21 for the public to be exposed to. It had been
22 diluted and sold in a residual type of heavy oil
23 for marine operations, and we -- we withdrew it
24 from that kind of products.

25 Fortunately, we found a company

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2 Huper Corporation that was looking for this
3 material after we had it separated and had it in
4 pure form, as best we could, and they took it and
5 they burned it in furnaces to produce carbon
6 black.

7 So, we were not guilty of having
8 sold the public any of these materials. We just
9 wouldn't let any of them go out. Went directly
10 from our plant to their plant, which they built
11 next door to us down in Baytown; and they burn
12 all of it. And it's still going on today, last I
13 looked into it.

14 Q. Okay. So, other than that one
15 potential exposure, the polynuclear aromatic
16 hydrocarbons, you determined that there were no
17 potential carcinogens in anything he might have
18 been exposed to from that first category, pipe
19 still products, feed, products and residues?

20 A. That's right.

21 Q. All right, sir. Let me take you
22 down to xylenes. Was there any carcinogenic
23 material in the xylenes that you looked at?

24 A. No. The only contaminant in your
25 xylene might be -- because it's a light aromatic

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2 solvent -- might be benzene, but it wouldn't be
3 the xylene problem. It would be any benzene it
4 might be associated with.

5 Q. Did you ascertain whether the
6 xylenes that Mr. Allgood might have been exposed
7 to might have been contaminated with benzene?

8 (Mr. Cruse left the room.)

9 A. I did not have that information but
10 they had already listed benzene down here and I
11 knew how hazardous it was. And I assume that if
12 they were handling any xylene with contamination,
13 it would be very unusual that they would be
14 there; and they would know it and would handle it
15 the same way they did the benzene.

16 BY MR. McELVEEN:

17 Q. All right, sir.

18 A. Should do it.

19 Q. Let's go to toluene. Did you review
20 or are you aware of any literature that indicates
21 that toluene has carcinogenic potential for
22 humans?

23 A. Yes, I'm familiar with what large
24 volume of toluene examination in tests; and it is
25 not -- is not carcinogenic.

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2 Q. Okay. Doctor -- excuse me,
3 Professor Hammond, my partner here has reminded
4 me of something; and I had intended to do it. I
5 forgot to. We're still pretty short into the
6 list. If you would -- and could we go down one
7 by one -- could you tell me to the best of your
8 recollection which of the documents that you've
9 said you looked at that you looked at for each of
10 these items.

11 Let's go back to pipe ^{style}
12 products, feed, products and residues. Which of
13 the reference materials did you look at for that
14 category of substances?

15 A. Well, mainly I used the Humble Oil
16 and Exxon findings and examinations and my own
17 knowledge of what we did and what we didn't and
18 why we did it.

19 Q. All right, sir.

20 A. And then I looked at A.P.I.,
21 whatever A.P.I. documentation that we had, as far
22 as the same -- that they did a series of many of
23 these materials for us at Harvard.

24 Q. Okay.

25 A. And I looked at those. Butene, the

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2 same way. Butene.

3 Q. Let me just stick with you for a
4 second on pipe still products, feed, products and
5 residue. So the TLV book you looked at with
6 respect to those materials that you knew of from
7 your experience would have been coming out of the
8 refinery operations, right?

9 A. Very seldom would they have been
10 coming out of the refinery as commercial
11 products; but they would have been generated
12 within the plant somewhere, in some cases, could
13 have been.

14 Q. Right. I understand.

15 A. Particularly, if they had
16 hydrocrackers. They had the big thermocrackers
17 and also the hydrocrackers.

18 Q. Right, sir. But in the absence of
19 knowing anything specifically about Mr. Allgood,
20 you had to rely on your own experience about what
21 sorts of materials he might have been exposed to,
22 right?

23 A. Well, I assumed this was a correct
24 list, pretty thorough.

25 Q. I understand that, but I'm just

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2 saying that, for example, the kind of pipe still
3 products that he would have been exposed to were
4 based on your assumptions about what people you
5 knew who had been exposed to pipe still products
6 had been exposed to, right?

7 A. Also, let me say that because we
8 were the largest most diversified and he was
9 handling primarily chemical products rather than
10 actuality in refinery where these crude oils were
11 broken down, he would have been getting the --
12 from Amoco Chemical Company and his products
13 would have been somewhat different than what the
14 residues and so forth would have been.

15 Q. Okay. Okay. All right, sir. Now,
16 you mentioned the A.P.I. materials and a series
17 that had been done at Harvard for the A.P.I.?

18 A. Yes. Toxicological reviews.

19 Q. And those are toxicological reviews
20 of certain of these chemicals, right?

21 A. Yes. And any of the other materials
22 that had any hazardous nature to them, health
23 hazardous nature would have been covered by them.

24 Q. Okay. So that with respect to the
25 pipe still products, feed, products and residues,

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2 to the extent that you identified particular
3 compounds, you looked at the A.P.I. book on them,
4 the TLV book on them and the TLV documentation
5 book?

6 A. I did review them.

7 Q. And then in addition, do you recall
8 looking at any backup documents from the
9 documentation book on that first category, the
10 pipe stills products and so forth?

11 A. Yes, I did. I looked under mineral
12 oil in these books and looked at what they had to
13 say about those and -- as well as the
14 documentation on it.

15 Q. Okay. Mineral oil specifically?

16 A. No, they didn't mention some of the
17 compounds that I mentioned to you. They just put
18 subtitles under those, and they would say that
19 highly refined products without any nature or
20 hazardous nature, then they would say on the
21 slightly refined product, there might be P.N.A.s
22 and to raise a question about to alert you to
23 look at the P.N.A.s in a separate -- in a
24 separate source, which I did.

25 (Mr. Cruse entered the room.)

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2 BY MR. McELVEEN:

3 Q. Okay. And you, in fact, did that,
4 right?

5 A. I did that and I had done that from
6 my 30 years that I had been with the company.

7 Q. And with respect to -- did you look
8 at any OSHA regulations with respect to that
9 first category there? OSHA really doesn't
10 regulate, I guess, anything that's that general,
11 right?

12 A. I saw nothing in OSHA regulations as
13 far as limits or a precaution that wasn't already
14 in here and a lot of materials that are here was
15 not covered by OSHA.

16 Q. OSHA. All right, sir. And with
17 respect then to the xylenes, again, you looked at
18 the TLV book for xylenes; is that correct?

19 A. I did.

20 Q. And you looked at the A.P.I.
21 materials, the toxicological --

22 A. I did.

23 Q. -- reviews for xylenes?

24 And you looked at the TLV book
25 documentation for xylenes?

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2 A. I did.

3 Q. And you looked -- did you look at
4 any backup document -- backup to the
5 documentations for xylenes?

6 A. No, I didn't need to. No.

7 Q. Okay. When the term "xylenes" is
8 used here, I take it that you believe that all
9 the xylenes that he might have been exposed to
10 are of essentially equivalent toxicity?

11 A. They were without any characteristic
12 properties or hazards or characteristics; and
13 they are -- really are -- generally, the more
14 complex the xylenes are, the less hazardous they
15 generally are.

16 Q. Okay.

17 A. And the less volatile. So, it's
18 hard to get the vapors in the air in
19 concentrations.

20 Q. All right, sir. And so, with
21 respect to the -- the xylenes, then, you made
22 those determinations.

23 With respect to toluene, you looked,
24 I take it, at the TLV book, correct?

25 A. Yes.

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2 Q. And you looked at the A.P.I.
3 material, the tox review on toluene, right?

4 A. Yes.

5 Q. And you looked at the TLV book
6 documentation on toluene?

7 A. I did.

8 Q. Did you look on anything further
9 than those three items for that?

10 A. I don't recall that I made any
11 further search on those.

12 Q. Okay. Take me down, if you would,
13 to the butenes. Now, are butenes aliphatic
14 hydrocarbons?

15 A. They are aliphatic.

16 Q. And are they -- they are not --

17 A. Aromatic?

18 Q. No, they're not -- they don't have a
19 hydrogen at every -- on every bond?

20 A. They're not polycyclic, no.

21 Q. Okay. What -- did you look at the
22 TLV book on butenes?

23 A. Yes. And butenes are down in the
24 category of almost a gaseous material. Just
25 below that at normal temperature and pressure you

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2 would have the pentanes, is a little higher, but
3 the -- right below butenes you'd have the --

4 Q. Propane?

5 A. -- propane and you're familiar with
6 the properties of propane.

7 Q. Yes, sir. Yes, sir.

8 A. Well, butene is no particular
9 difference characteristic than from a hazardous
10 nature explosion and fire and so forth.

11 Q. Are the butenes any different
12 toxic -- or from a hazardous nature point of view
13 than butane is? In other words, is a loss of any
14 of those hydrogens cause any lessening or
15 increase of the hazardous properties?

16 A. No. It would take some isolated oh,
17 well, there's not any characteristics that are
18 worse than butene.

19 Q. Okay. And when it says butenes
20 were -- how many different butenes are there that
21 you looked at?

22 A. Oh, just dozens.

23 Q. Did you look at all of them?

24 A. No. No. No. As I said, the more
25 complex they are and you get away from butene,

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2 they are generally --

3 Q. More inert?

4 A. No. They're more innocuous, is the
5 word I'm looking for.

6 Q. All right, sir. And did you look at
7 any A.P.I. materials on the butenes?

8 A. No. I don't know we ever had a
9 toxicological report on butene. They're so --

10 Q. Okay.

11 A. -- innocuous and fire would be a
12 main problem with that.

13 Q. Did you look at any documentation --
14 TLV documentation on any butenes?

15 A. Whatever was available, yeah.

16 Q. Take me down to propylenes, if you
17 would. Did you look at the TLV book on
18 propylenes?

19 A. I did.

20 Q. And did you look at any A.P.I. tox
21 reviews on propylenes?

22 A. Well, there wasn't any on propylene.

23 Q. Okay. Did you look --

24 A. But the A.P.I. wouldn't, but there
25 are documentations in the TLV --

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2 Q. And you looked at those?

3 A. -- manuals and I looked at those.

4 Q. Did you look at any backup materials
5 back beyond or, you know, above and beyond the
6 backup of the documentations for the TLVs?

7 A. No, I didn't because I found no
8 indication of any; and I'm familiar with those
9 materials having worked with them for 30 years.

10 Q. All right, sir. And to your
11 knowledge, there's no literature that indicates
12 that propylenes are potential animal or human
13 carcinogens?

14 A. No. If it were, I'd be one of the
15 first to know about it.

16 Q. Go down to methyl mercaptan. Did
17 you look at the TLV book on methyl mercaptan?

18 A. Yes, I did.

19 Q. And was there a tox review on methyl
20 mercaptan?

21 A. There is. Mercaptan materials
22 contain sulfur and the main use of them is
23 odorizing in natural gas. They use these for
24 odorizing; they smell so badly because they're
25 very small pipes.

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2 Q. And so people are alerted that
3 there's a natural gas leak, right, when they
4 smell gas?

5 A. Heat from explosions.

6 Q. Okay.

7 A. But I know no occupational diseases
8 produced by the mercaptan.

9 Q. All right, sir. And so, just in
10 summary, you'd say that you're aware of no
11 literature that indicates that methyl mercaptan
12 might be a human or an animal carcinogen?

13 A. No.

14 Q. Okay. Benzene, you've already
15 talked a little bit about; but let me just ask
16 you. You looked at the TLV book on benzene, I
17 take it, or did you feel the need to look at --

18 A. Yes, I don't think, you know, I
19 particularly need it. But, of course, I'm
20 familiar with all the changes that take place
21 every year, any suggested place and I'm happy to
22 report you they're approaching my value very
23 closely right now.

24 Q. All right, sir. And did --

25 A. One tenth of one part per million

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2 and that's as low as you can detect. I imagine
3 if we had normal matter of air in here that
4 would -- would probably test out one tenth of a
5 part per million of benzene.

6 Q. You mean in this room that we're
7 having a deposition in?

8 A. In the hotel.

9 Q. Just because it's a ubiquitous
10 substance in the air?

11 A. It's just there and it's a higher
12 concentration, say, in the Smoky Mountains and
13 that type of vegetation or higher area around
14 Kerrville where they put out the aromatic
15 material, you'll find somewhat higher than you
16 would downtown Houston. But downtown Houston you
17 have it from all type of combustion, an amount
18 that we mentioned in here.

19 Q. Right, sir. Did you look at the
20 toxicological review from the A.P.I. on benzene
21 in this case?

22 A. I surely did.

23 Q. Okay. And the TLV documentation, I
24 take it?

25 A. I did.

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2 Q. And did you look at any backup
3 documentation past those items for benzene?

4 A. No. I was satisfied that I knew all
5 that needed to be known about benzene.

6 Q. And you're satisfied, I believe that
7 you earlier said, that benzene is a --
8 probably -- is a probable human carcinogen based
9 on your review of the literature?

10 A. Yes. And peculiar enough, it
11 attacks the bone marrow as a primary organ
12 produces leukemia. The blood destroys the blood
13 cells and red -- red ones and the white ones and
14 the platelets. So you might bleed to death from
15 internal hemorrhages from benzene because you
16 destroyed all your platelets and, therefore, your
17 blood could not collate.

18 Q. And the next substance --

19 MR. HOLFORD: I'm sorry --

20 MR. McELVEEN: I'm sorry, go ahead.

21 MR. HOLFORD: -- were you finished?

22 A. I think that's just an illustration
23 of how serious benzene is.

24 MR. HOLFORD: Okay.

25 BY MR. McELVEEN:

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2 Q. The next item on the list is
3 styrene, ethyl benzene. Is ethyl benzene a
4 synonym for styrene?

5 A. No, ethyl benzene is the chemical
6 name and styrene is a, more or less, commercial
7 name.

8 Q. All right, sir. Did you review the
9 TLV book on styrene?

10 A. I did.

11 Q. Did you look at any toxicological
12 reviews or the A.P.I.?

13 A. I did.

14 Q. Did you look at the documentation
15 for styrene?

16 A. Yes, I did.

17 Q. Did you look at any backup, back
18 behind the documentation?

19 A. No, I didn't.

20 Q. Okay. Are you aware of any
21 literature that links or associates styrene with
22 cancer in humans?

23 A. No.

24 Q. Are you aware of any -- I'm assuming
25 I know what your answer is, but I need to ask you

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2 for the record. Are you aware of any literature
3 that associates styrene with laryngeal cancer in
4 humans?

5 A. I -- I'd have to say my own
6 experience I do not know. I do not have that
7 information that would indicate that the
8 combination of cancer from styrene, no.

9 Q. I'm sorry, is that a no?

10 A. I'm just saying that I didn't make a
11 special study of that, but I didn't find any
12 cause -- cause or relation between styrene
13 exposure and cancer period.

14 Q. Period. Including laryngeal cancer,
15 right?

16 A. (No verbal response.)

17 Q. Okay. Kerosene. Did you look at
18 the TLV book on kerosene?

19 A. Yes.

20 Q. And did you -- is there a tox
21 review, A.P.I. tox review on kerosene?

22 A. No, I don't remember that there
23 was. It's a rather innocuous material.

24 Q. All right, sir. So the TLV books
25 really is the only place you looked for kerosene?

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2 A. And the documentation.

3 Q. Oh, I'm sorry, you're right. And
4 the documentation, TLV documentation you looked
5 at, correct?

6 A. Yes.

7 Q. And you looked at nothing else for
8 kerosene?

9 A. That's right.

10 Q. Are you aware of any studies that
11 associate or link kerosene with human cancer of
12 any type?

13 A. I don't have any -- no, I don't have
14 any experience with that combination.

15 Q. Okay. Heptane is the next substance
16 down on the list. Did you look at the TLV book
17 on heptane?

18 A. I have.

19 Q. And is there a toxicological review
20 on heptane?

21 (Mr. Cruse left the room.)

22 A. No, I think that the heptane and the
23 six -- this is seven carbon items and a straight
24 chain aliphatic compound. I think that was group
25 along with -- let's see, what were the other

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2 materials? The six carbon and benzene, all of
3 those are grouped as -- together with little or
4 no hazardous nature.

5 BY MR. McELVEEN:

6 Q. All right, sir. Did you look at the
7 backup documentation for heptane, backup TLV
8 documentation?

9 A. For -- for which one?

10 Q. Heptane.

11 A. Heptane? I didn't have to this
12 time. I am so well familiar with it, so
13 experienced with handling it in the past, I
14 didn't have to. It's not associated with cancer.

15 Q. All right, sir. That was going to
16 be my next question. You're aware, then, of no
17 literature that associates heptane with human
18 cancer of any sort?

19 A. That is true.

20 Q. Okay. Down to acetone. Did you
21 look at the TLV limit on -- for acetone?

22 A. Yes, I'm familiar with that.

23 Q. Okay. Did you look at any
24 toxicological reviews on acetone?

25 A. I have -- oh, yes, over the years

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2 I've looked at acetone. And it is, again,
3 apparently innocuous material.

4 Q. Okay.

5 A. Acetone, fire problem, is a main
6 hazard.

7 Q. And did you for this case look at
8 any backup documentation for the TLVs for acetone
9 or you didn't need to?

10 A. I didn't need to. I'm just
11 satisfied with the TLV.

12 Q. All right. And I take it, then,
13 that you are aware of no studies which link
14 acetone with the cancer in humans or animals?

15 A. I have no experience ever,
16 literature or in my own experience that would
17 associate it.

18 Q. Okay. Methyl alcohol. Now, that's
19 also known as methanol, I think?

20 A. It is.

21 Q. All right, sir. Is that the same as
22 wood alcohol?

23 A. It is, yes.

24 Q. All right, sir. Did you look at the
25 TLV for methyl alcohol?

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2 A. I'm well familiar with that material
3 and its hazardous nature and so forth; but I
4 never did -- have seen any correlation between
5 the exposures of methyl alcohol and cancer, no.

6 Q. All right, sir. The -- so, ask,
7 let's say, a different way. You're familiar with
8 no literature that would link or associate methyl
9 alcohol with cancer in animals or humans, right?

10 A. That's right.

11 Q. Okay. The dows is the next category
12 or Dow "S". What did you interpret that to mean?

13 A. They give it down here they're
14 dinitro phenols, that they produce -- Dow
15 produces heat exchanges and so forth and an alkyl
16 substituted methyl, sec butyl. But none of those
17 products in my experience or knowledge such as
18 these phenols associate with cancer at all.

19 Q. And that's in humans or animals?

20 A. That's in humans and animals.

21 Q. Okay. The T.B.C., tert butyl phenol
22 there, the next category, did you -- is there a
23 TLV for tert butyl phenol?

24 A. I don't recall at this moment, but
25 it's just -- I looked at it at the time and

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2 whether I found a TLV or not, I won't take time
3 to look it up again, but I looked for it.

4 Q. All right, sir.

5 A. And no problem with -- correlation
6 with cancer.

7 Q. All right. So you ascertained that
8 there was no evidence, animal or human, that tert
9 butyl phenol was a human or animal carcinogen; is
10 that right?

11 A. That's true.

12 Q. Okay. Cumene is the next category,
13 alpha methyl styrene. Is cumene the same thing
14 as alpha methyl styrene?

15 A. That's the chemical name to break it
16 out would be alpha methyl styrene is cumene, yes.

17 Q. All right, sir.

18 A. Cumene's the commercial name.

19 Q. All right. Is there a TLV for
20 cumene, do you remember?

21 A. I believe there's a TLV booklet.

22 Q. Okay. Did you review any of the
23 toxicological reviews for cumene?

24 A. Yes, I reviewed the TLV booklet, the
25 TLV certification.

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2 Q. The documentation?

3 A. Documentation, yes.

4 Q. All right, sir. And did you look
5 behind that at any OSHA information on cumene?

6 A. No, I didn't look at any literature
7 on cumene. No.

8 Q. Okay. Are you of the belief that
9 there is no literature which supports an
10 association or linkage between animals and humans
11 and cancer with respect to exposure to cumene?

12 A. I'm sure there's not.

13 Q. Okay. Talking about Resin 18, which
14 is the next category down there. Now, do you
15 know what Resin 18 is?

16 A. I'm not familiar with that
17 particular material, and I have a question mark
18 by it.

19 Q. Okay.

20 A. You know, there are so many resins
21 and plastic materials and base -- plastic base
22 materials but I've never -- I looked up
23 particular in the resins and I found nothing in
24 the literature that would refer to cancer,
25 properties in cancer, carcinogenic material.

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2 Q. Of resins generally?

3 A. Yes, of resins generally.

4 Q. Okay.

5 A. And 18 probably refers to the number
6 of carbon atoms that's in that resin.

7 Q. Is Resin 18, to your belief, an
8 Amoco sort of trade name for one of its resins?

9 A. It may be an internal name with any
10 company you knew for that.

11 Q. Did Humble and later Exxon, did they
12 have numbered chemicals in the workplace that
13 were sort of trade name chemicals were not --
14 they were mixtures. They were trade secrets, for
15 a lack of a better term, and they were kept
16 within the company?

17 (Mr. Cruse entered the room.)

18 A. They were not necessarily kept in
19 the company. It was just a matter of sales being
20 able to distinguish them. For example, if I said
21 go get you a can of Varsol, you know. Well,
22 unless you were familiar with Varsol being a
23 cleaner or thinner or something, you wouldn't
24 have any idea what I'm talking about.

25 But if the public is associated

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2 with -- that's an example of having these type of
3 trade names, so to speak, for the products. And
4 there's no doubt that this Resin 18 could be to
5 the marketing department because it was selling
6 it to the public.

7 BY MR. McELVEEN:

8 Q. And nowadays, am I correct, you
9 could get a material safety data sheet that would
10 tell you what's in Resin 18?

11 A. On all of these products, you must
12 be -- put it down what is on it. Maybe fire is
13 the only problem, but you still need to put it in
14 the material safety data sheet issue. And first
15 they measure see what it needs and so forth.

16 Q. Right. The polybutenes, did you --
17 did you look for TLVs on polybutenes?

18 A. No. The polybutenes mean that
19 they've been coagulated together so that the
20 butene is a characteristic. And polybutene
21 possibly means they formed a resin with the heavy
22 material that would be of no vapor pressure and
23 so forth. It would be just as a resin, the
24 material. That's what that means. But it's
25 still butene.

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2 Q. Did you satisfy yourself --

3 A. From the -- yes. No characteristics
4 that would be carcinogenic either.

5 Q. Okay. Now, the lab acids, let me --
6 those are obviously different acids. Let me just
7 go down them one by one. Did you check the TLV
8 book on sulfuric acid?

9 A. Yes, that is well known.

10 Q. And did you look at the
11 toxicological profile or review on sulfuric acid?

12 A. Well, you don't have much chance of
13 having any toxicity tests because it's going to
14 burn you from the first to your lip to the bottom
15 of your feet. The hazard is in this
16 characteristic in sulfuric acid, and that's just
17 something you can't have contact with.

18 The only way you've got a problem
19 with sulfuric acid is heat it to the point that
20 there would be any fume or sulfur dioxide which
21 would -- is listed here and that would be an
22 irritant to your respiratory tract.

23 Q. So you are familiar with no
24 literature that links sulfuric acid --

25 A. No.

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2 Q. -- or associates it with cancer --

3 A. I am not.

4 Q. -- in humans or animals? Okay.

5 Nitric acid. Is -- is that the same
6 situation?

7 A. Yes, that's right.

8 (Mr. Riley left the room.)

9 BY MR. McELVEEN:

10 Q. Okay. And just for record purposes
11 more than anything else, you're familiar with no
12 literature that associates or links nitric acid
13 with cancer of any type in humans or animals?

14 A. That's true. And the
15 characteristics of these is that it's an acute --
16 acute hazard, and it's on any type of living
17 tissue. Nitric acid could cause fire if it
18 spilled and it got on combustible material like
19 clothing or fabric of that type.

20 Q. And with respect to hydrochloric
21 acid, you're, again, aware of no links or
22 associations between hydrochloric acid and cancer
23 in humans or animals?

24 A. No, I don't because we have to have
25 it in our stomach for digestive material. We

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2 generate a couple of pints of pretty strong
3 hydrochloric acid in our stomachs every day to
4 digest our food.

5 Q. And phosphoric acid, same situation?

6 A. Phosphoric acid is a by-product,
7 more or less, of adding sulfuric acids and down
8 to apatite, that's a mineral, phosphate and
9 calcium phosphate, and that will break -- the
10 sulfuric acid will replace the phosphoric acid in
11 that molecule. So it produces phosphoric acid in
12 that manner, a strong concentrated sulfuric acid
13 put on apatite is a mineral that's deposited in
14 the ground in an insoluble way, so to say.

15 Q. Okay. And you're aware of no
16 literature that links or --

17 A. Again, it's an acute effect. It
18 grows in this nature of it on the human skin.

19 Q. Okay. And, again, for record
20 purposes and really maybe for no other, you're
21 aware of no literature that links phosphoric acid
22 with cancer in humans or animals?

23 A. No, there's not any relationship
24 that I know of.

25 Q. Okay. Freon. Did you -- is there a

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2 TLV for freon?

3 A. You know, that's a -- freon is a
4 mixture of a chlorinated fluorinated hydrocarbon
5 make it into that. And it's a very, very inert
6 material. I don't know of anything in nature
7 that breaks it down and it is in a category that
8 is being accused of knocking the ozone
9 concentration between us and the sun and they're
10 not going to be able to be making it that much
11 longer.

12 But it's so inert. It will fixate
13 you by replacing the oxygen and the air you have
14 to live by. But other than that, I don't know of
15 any hazards associated with freon.

16 Q. All right, sir. And so you're aware
17 of no -- nothing that links cancer in humans or
18 animals to freon?

19 A. That's true.

20 Q. Okay. Heavy lube oil. Again,
21 what -- are you aware of precisely what they're
22 talking about there?

23 A. Well, yes. Lube oil, of course, is
24 a lubricant as an oil manufactured to be grease
25 on bearings and so forth. And the heavier it is,

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2 the more stable it is, usually, and it has no --
3 well, you could say just Vaseline that we use all
4 the time on our skin is basically a very heavy
5 lube oil.

6 Q. All right, sir. And you're aware of
7 no literature that links heavy lube oil with
8 cancer in animals or humans?

9 A. No, those white oils and lube oils,
10 they're generally highly refined. And then all
11 the materials that might have any carcinogenic
12 nature are extracted from them, you know, so they
13 make them -- additional type of quantities are
14 accepted.

15 Q. And finally glycerine. Is there a
16 TLV for glycerine?

17 A. I don't know. You know, it's a food
18 product. I mean, you get it from natural
19 materials. You can manufacture it but you can
20 extract it from plants and it's -- we eat plenty
21 of that all the time in vegetables and fruits and
22 things like that. But I don't know -- I also
23 know it's also an admissible grade of material
24 and wouldn't be any correlation between that.

25 Q. Okay. No link between glycerine and

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2 cancer in humans or animals?

3 A. That's right.

4 Q. Okay. Are you aware of -- of what
5 doses of each of these materials Mr. Allgood may
6 have been exposed to over his career at Amoco?

7 A. No, I do not know what he was -- how
8 much he was exposed to.

9 Q. Okay. Do you know the extent to
10 which he was required to wear a respirator at
11 Amoco when he was dealing with any of these
12 materials?

13 A. I do not know their safety practices
14 in that regard, know where he would be when he
15 had to wear them and the length of time. So, no,
16 I'm sorry, I can't contribute to that.

17 Q. Okay. One of the subjects that's
18 discussed in your Threshold Limit Value book from
19 1979 discusses the subject of mixtures here on
20 Page 5. Let me read that short paragraph into
21 the record. (Reading) Mixtures. Special
22 consideration should be given also to the
23 application of the TLVs in assessing the health
24 hazards which may be associated with exposure to
25 mixtures of two or more substances. A brief

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2 discussion of basic considerations involved in
3 developing threshold limit values for mixtures,
4 and methods for their development amplified by
5 specific examples are given in Appendix C.

6 Professor Hammond, did you draw any
7 conclusions or make any opinions in this case
8 with respect to any mixtures that Mr. Allgood may
9 have been exposed to, mixtures of chemicals, I
10 mean?

11 A. No, I didn't because I didn't see
12 any purpose. I didn't see any way I could use
13 that information.

14 Q. All right, sir. And the -- are you
15 familiar with the term "synergy"?

16 A. Synergistic materials?

17 Q. Yes.

18 A. Yes, I am.

19 Q. And what does that mean -- that term
20 mean to you?

21 A. Well, a good example of that is
22 there's certain materials that will be on your
23 skin and then you get exposed to the sun, you
24 blister much quicker. You get a synergistic
25 effect.

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2 Q. So it's an effect that's more than
3 the additive effect of each of the substances
4 alone?

5 A. Yes. And it is, you're right. And
6 they work together to produce more likely harmful
7 effects such as sunlight, if you have certain
8 materials on your skin.

9 Q. Almost like a multiplicative effect
10 rather than an additive, maybe?

11 A. Yeah, that would be a good term for
12 it.

13 Q. Okay. Do you know with respect to
14 any of the materials that are listed in
15 Mr. Rogers' letter as to whether any of those act
16 synergistically with each other?

17 A. I didn't particularly examine it
18 from that standard point, but I don't know of
19 any -- any of the materials. I don't recognize
20 any of these materials that's been activators, we
21 would call it from the standpoint of synergistic
22 effect. No, I don't -- I'm familiar with that
23 operation and that term and also the
24 characteristic and the precautions you have to
25 take if you have a combination, but I don't see

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2 anything here that would be in that category.

3 Q. All right, sir.

4 MR. McELVEEN: Off the record just a
5 second, if we could.

6 (Brief recess.)

7 BY MR. McELVEEN:

8 Q. Professor Hammond, you've described
9 what you've done in great detail about the
10 materials listed on Mr. Rogers' letter. How much
11 time would you estimate did that take you to do,
12 what you just described to me?

13 A. Because I had most of it at my
14 fingertips, it -- and these few products here, I
15 would think it might have taken me, oh, let me
16 see. If I could run through these very quickly,
17 because I knew them so well. I may have done it
18 in a day, stretch it out over two days, but I
19 could have fit it all in a day.

20 Q. And so would that mean that from
21 your point of view of the amount of time you
22 billed Mr. Holford, that it may have been 800 or
23 a thousand dollars?

24 A. No. I -- I think he's only paid me
25 \$400.

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2 MR. BIERSTEKER: I'd catch up with
3 him right after this deposition.

4 THE WITNESS: I don't know, maybe I
5 should bill him.

6 (Laughter.)

7 BY MR. McELVEEN:

8 Q. Let me ask the question to you in
9 this way. There's a record in one of exhibits
10 that indicates that he has, in fact, sent you
11 \$400. Does that represent all the time you've
12 spent on this project?

13 A. That's the only time I charged him.

14 Q. Okay. But you think you may have
15 undercharged him a little bit?

16 A. Sounds like it.

17 Q. All right. At least from your point
18 of view, \$400 was sufficient to cover your time,
19 right?

20 A. Well, I worked for him again in
21 getting ready for this a few hours; so, I'll have
22 to charge him for those.

23 Q. Well, but with respect to just
24 this --

25 A. That's right. That's right.

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2 Q. -- looking at material, about \$400?

3 A. See, I've lived with these materials
4 for 30 years; so, I knew just where to go look
5 and where the publications were and been able to
6 do that quickly.

7 Q. Professor Hammond, did you prepare
8 along with John Prevost a series of material
9 safety data sheets for the coast guard on marine
10 hazardous substances at one time?

11 A. I don't recognize that last name.

12 Q. Okay. Well, let me just -- sure --
13 show you an item that has your name on it and see
14 if you recollect that at all.

15 A. Prevost. Well, oh, yeah. I was
16 trying to think of somebody in the company. Over
17 the period of about eight years or so, I worked
18 for Mr. John Prevost on the U.S. Department of
19 Transportation, U.S. Coast Guard reference and
20 this went on for maybe six years, I guess.

21 Q. All right, sir. And is the --

22 A. Yes. Yes, I remember. I don't have
23 a copy of this, though. Whether they ever got a
24 copy, I'm not sure.

25 Q. Well, it is publicly available, I

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2 will represent to you, Professor Hammond. You do
3 remember, though, working with Mr. Prevost --

4 A. Oh, yes.

5 Q. -- on this what would be known, I
6 guess, for lack of a better term, as some
7 material safety data on marine hazardous
8 substances, though, right?

9 A. Yes. That's right. And what all we
10 knew about it at that time.

11 Q. All right, sir. That's really all I
12 had to ask you about that. Just curious.

13 A. If you have an extra copy, I'd
14 appreciate it.

15 MR. HOLFORD: Well, rather than mark
16 it, I'd just -- I would ask for -- since he -- I
17 mean, we can either mark it or you can promise to
18 give me a copy of it.

19 MR. McELVEEN: Well, you've
20 identified. Why don't we mark it. We'll don't
21 you do that.

22 MR. HOLFORD: That's fine.

23 MR. McELVEEN: Mark that, if you
24 would, the next in order.

25 (Hammond Exhibit No. 7

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2 marked for identification.)

3 BY MR. McELVEEN:

4 Q. Professor Hammond, we've marked that
5 next in order. I want to ask you just one more
6 question about it and, that is, turn to Page 2 of
7 it. Just the first inside page there.

8 MR. HOLFORD: What exhibit is that?

9 MR. McELVEEN: 7, I believe, isn't
10 it?

11 THE WITNESS: Yes, No. 7.

12 A. All right.

13 BY MR. McELVEEN:

14 Q. And I want to ask --

15 A. And that's a title page?

16 Q. As far as I know, yes, sir.

17 A. Yeah.

18 Q. And I guess my question is: It's
19 dated December of 1985, was that -- did this --
20 was that consistent with your recollection, that
21 it was in the early eighty -- late '70s, early
22 '80s that you put this together for the coast
23 guard?

24 A. That is when it came out as a
25 publication. Actually, the work had been done

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2 by -- let's see, this is '85?

3 Q. Well, that's what, you know, the
4 thing said. I'm just --

5 A. Well, I'm just trying to think now.
6 And I worked on through '87. So, yes, that would
7 have been -- I'm trying to get my -- my work
8 finished before '87, yeah.

9 Q. All right, sir.

10 A. That would've been about right.

11 Q. All right, sir. Just take that back
12 from you.

13 A. Yes, sir.

14 MR. McELVEEN: Why don't we go off
15 the record here just a minute or so and I may be
16 about finished and we can talk to Mr. Riley about
17 what he wants to ask and try to consolidate here.

18 MR. HOLFORD: Oh, yeah, fine.

19 (Brief recess.)

20

21 EXAMINATION

22 BY MR. RILEY:

23 Q. Professor, my name is Tom Riley. As
24 you know, I introduced myself to you this
25 morning; and I represent the other defendant in

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2 this case -- one of the other defendants in this
3 case, American Tobacco Company.

4 Let me ask you first: We're having
5 the deposition held at the Doubletree Hotel, and
6 my understanding is that the reason for that is
7 you asked it to be held here; is that right?

8 A. I asked for it to be here.

9 Q. And why did you ask for the
10 deposition to be held here?

11 A. Well, the convenience of being --
12 would be unnecessary for me to walk too far and
13 to be here within a comfortable place. Mainly
14 for that reason. And I just try to take care of
15 myself, physically.

16 (Mr. McElveen left the room.)

17 BY MR. RILEY:

18 Q. You told Mr. McElveen that you had
19 spent maybe a day or two reviewing the literature
20 in connection with this case; is that right?

21 A. Repeat your question.

22 Q. You told Mr. McElveen that you spent
23 a day or two looking at some of the scientific
24 literature in this case, to support your opinion
25 in this case, right?

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2 A. I -- I did spend about that much
3 time. Not like we're doing here, steady and so
4 forth, but I did it at my convenience for a
5 couple of days.

6 Q. Can you tell me -- give me a rough
7 idea how many times you've talked or met with
8 Mr. Holford prior to today and --

9 A. Easily -- less than six.

10 Q. Well, how many -- can you do better
11 than that? Can you give me a better idea? Less
12 than six could be one to five.

13 A. Well, I guess because setting up the
14 date for this and the place to meet and all. It
15 might have been five.

16 Q. Okay. So you've either met or
17 talked with Mr. Holford approximately five times
18 prior to today?

19 A. I didn't meet with him. It was just
20 by telephone, other than about two meetings we've
21 had.

22 Q. You've had two face-to-face
23 meetings?

24 A. Two face-to-face meetings, and I've
25 talked to him three or four times.

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2 Q. And when were the face-to-face
3 meetings?

4 A. One of them yesterday afternoon, and
5 then one was in the early part of August of last
6 year.

7 Q. Okay. August of '92?

8 A. And if he's been by since that time,
9 I don't recall. He might have dropped something
10 off at my house or something of that type, but I
11 don't remember.

12 Q. So, to the best of your
13 recollection, you've had two face-to-face
14 meetings with Mr. Holford; the first one was in
15 August of 1992 and the second one was yesterday
16 afternoon, correct?

17 MR. HOLFORD: Before today.

18 MR. RILEY: Yes, before today.

19 A. Yes, I believe that's all.

20 BY MR. RILEY:

21 Q. How long did the first meeting with
22 Mr. Holford last? And I mean the one in August,
23 1992.

24 A. Yeah. Biggest part of an hour.

25 Q. And what did you and Mr. Holford

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2 talk about at that meeting?

3 A. I think he had --

4 MR. HOLFORD: I object. This has
5 been gone over and asked and answered.

6 A. That's right. Remember, we don't
7 want to run over too many minutes beyond the four
8 hours and you wouldn't be willing to pay. These
9 type of questions, you know, if you ask some
10 serious questions, I'd be glad to stay with you.

11 BY MR. RILEY:

12 Q. Are you going to argue with me, or
13 are you going to answer the question?

14 A. I'm going --

15 MR. HOLFORD: The question is a
16 repetitive question that he went to some degree
17 to answer for Mr. McElveen. I cannot instruct
18 the witness, so go ahead.

19 BY MR. RILEY:

20 Q. Doctor, let me ask you this: Have
21 you told -- did you tell Mr. McElveen everything
22 you can recall about your discussion with
23 Mr. Holford in August of 1992?

24 A. I have.

25 Q. Okay. Can you tell me what you and

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2 Mr. Holford talked about yesterday?

3 A. I had him to go over this subpoena
4 with me to see what I had to bring today, because
5 I didn't get that till this morning or the night
6 before. And so, he came over kindly to -- to
7 get -- or read that with me.

8 Q. Okay. Did you talk with anybody
9 other than the subpoena yesterday?

10 A. Not -- not any subject I remember.
11 No, I -- no other matter that was contained in
12 that subpoena and answering the questions.

13 Q. And on the couple of occasions where
14 you've talk with Mr. Holford on the phone, what
15 have you and Mr. Holford discussed?

16 A. The time for this deposition and the
17 place and the reaction he had from you-all after
18 he talked to you about meeting here. That was
19 the only subject we talked about.

20 Q. Do you intend to review any other
21 material in connection with your assignment in
22 this case?

23 A. I intend to be alert to any new
24 material or any material that might have passed
25 me by, escaped my attention; but I have nothing

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2 in mind at this moment.

3 Q. There's nothing specific right now
4 as you sit here today that you intend to do
5 between now and trial?

6 A. I'll -- I'll just be alert to
7 whatever I see or whatever I hear between now and
8 then, but I don't have any planned program to do
9 any further investigative work.

10 Q. Now, I understand that you've been a
11 consultant or an expert witness in a number of
12 other cases; is that right?

13 A. I have.

14 Q. And can you give me an idea of how
15 many other cases?

16 A. Let's say 15.

17 Q. And who -- do you know the names of
18 any of the lawyers that you've worked with?

19 A. John O'Quinn on a couple of cases.

20 Q. O'Quinn?

21 A. O'Quinn.

22 Q. Is he here in Houston?

23 A. He can tell you more about him than
24 I can. Yeah.

25 Q. Okay. Any other lawyers that you

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2 can recall working with other than Mr. O'Quinn?

3 A. Bill Baggett, William Baggett over
4 in Lake Charles.

5 Q. Okay. Anybody else you can recall?

6 A. I've worked with Exxon company law
7 department and Ed Lowenberg.

8 Q. Any others you can recall?

9 A. Mike Nussbaum.

10 Q. Where is Mr. Nussbaum located?

11 A. Exxon. And Kyle and -- K-Y-L-E -- a
12 lady lawyer, Lena is her first name, and she's
13 also with Exxon Company and one or two others
14 there in the department.

15 Q. Do you have any records at all
16 relating to depositions you may have given in
17 other cases?

18 A. Mainly would be by cases and
19 correspondence I might have had with others, but
20 I don't recall them.

21 Q. Do you keep a file on all the cases
22 you've testified in?

23 A. Not -- not a regular file.
24 Generally, I'll keep the file until the case has
25 settled and then I move it out to make room for

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2 something else that I need. I have a very small
3 file cabinet.

4 Q. In the cases you've testified in in
5 the past, how much have you charged per hour for
6 actual testimony, like we're doing today?

7 A. Same price as I'm -- same price.
8 For a trial, when I'm on the stand, I will charge
9 a minimum of \$2500 and then above that five
10 hours. Then if I'm kept over longer than that,
11 it will be at \$500 an hour.

12 Q. Have you ever charged a hundred or
13 \$150 an hour for actual testimony?

14 A. Not to my knowledge. I did some
15 work for Exxon in which they used me not as an
16 expert witness but as a consultant, and they paid
17 me \$200 an hour.

18 Q. Is it your testimony that you've --
19 you've always charged \$500 an hour for actual
20 testimony?

21 A. Yes, that's been my saying.

22 Q. When was the last deposition you
23 gave?

24 A. Sometime in August of this year for
25 Mr. Baggett.

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2 Q. For Mr. Baggett?

3 A. Yeah.

4 Q. Okay. What did you charge
5 Mr. Baggett?

6 A. I charged him the same. I have just
7 one fee for everything, is all I have for
8 everybody.

9 Q. Doctor, I'm just going to put in
10 front of you the exhibit list that was marked
11 earlier as an exhibit to your deposition; and I
12 just want to be clear on the record here that
13 you've made a search of your files and you've
14 produced for us everything that you think that
15 may be responsive to this subpoena, am I right
16 about that or am I wrong?

17 MR. HOLFORD: To the duces tecum.

18 MR. RILEY: Yeah.

19 MR. HOLFORD: Uh-huh.

20 A. You're a better judge of what's
21 involved in my -- in my subpoena than I am, but
22 as far as I could determine and I think that I
23 covered everything.

24 BY MR. RILEY:

25 Q. Okay. In other words, there's no

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2 other materials you have that you think may be
3 covered by the subpoena?

4 A. That's true.

5 Q. Okay. Do you have a file on this
6 case?

7 A. I brought the whole thing with me
8 and most of it has been put out on the table.

9 Q. Okay. What else is in there that
10 you haven't produced to us?

11 A. There's a C.V. in here on me.

12 MR. HOLFORD: Which we've produced
13 BY MR. RILEY:

14 Q. Okay.

15 A. Which you already have, I
16 understand. And then there was a subpoena and
17 the attachments.

18 Q. So, with those two exceptions,
19 you've produced for us your entire file in this
20 case?

21 A. I did.

22 Q. Do you have an office anywhere?

23 A. At home.

24 Q. Okay. Do you have any professional
25 literature or textbooks in your library?

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2 A. Yes. Yes, I have two or three
3 shelves full.

4 Q. Okay. Are they textbooks on
5 industrial hygiene?

6 A. Yes, they are and they're reference
7 books.

8 Q. Can you identify for me the ones
9 that you consider to be the most important of
10 those textbooks?

11 A. There is one that I have, right, and
12 I think that's very important and I use it. It
13 was written with Dr. Hervey Elkins on industrial
14 hygiene practices, and then there's one on the
15 documentations that I use for TLV references and
16 also for the toxicological -- for the biological
17 exposure data. Then I go back and look at Alice
18 Hamilton's book written in 1924.

19 Q. Hamilton's book was written in 1924?

20 A. '24, I use. It's a classic. And
21 she was a great lady. Then I come on up to the
22 Fundamentals of Industrial Hygiene written by
23 NIOSH in 1970, '71. That was a book on -- let's
24 see. Industrial Health that was written about in
25 1972. And let's see, there's some

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2 more -- oh, yeah. Henderson and Haggard at Yale
3 University in the Division of Occupational -- on
4 occupational problems but he wrote it for the
5 chemical, American Chemical Society and the
6 second edition I have and that was published in
7 1944, first edition was about ten years earlier
8 than that. I use Henderson and Haggard.

9 Q. What other textbooks that you've got
10 in your library the ones that you consider
11 important that are published, let's say, after
12 1970?

13 MR. HOLFORD: Well, were you through
14 with your list?

15 THE WITNESS: Yeah.

16 A. I just want to say that since 1970,
17 I haven't seen anything written that was of any
18 importance to me. I knew all of that before that
19 time.

20 BY MR. RILEY:

21 Q. So you don't have any significant
22 textbooks in your library published after 1970?

23 A. Yeah, I have some, but I don't use
24 them. I don't remember -- to tell you what the
25 names of who the authors were since that time.

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2 Q. Okay. Tell me the names of the
3 authors of those texts. You say you had some
4 published after 1970, but you don't use them.
5 Just tell me the names of the authors of those.

6 A. I don't recall the names of them.
7 That's what I said. I don't recall the name of
8 them. I also -- for the American Conference of
9 Governmental Hygiene, I used to review a lot of
10 books that came -- that were issued during the
11 period of 1980 and I'd review them and they would
12 give those copies to me, after I had written my
13 review on them. And they are up in the shelves,
14 but I haven't used them as references.

15 Q. Now, I understand that you retired
16 from teaching in 1987, right?

17 A. That's right. Yes, in 1987.

18 Q. And since that time, how much time
19 do you spend working on a weekly basis, would you
20 say?

21 A. Oh, let's see, not -- not more than
22 average of one day a week.

23 Q. And that would be a day a week that
24 you spend consulting on litigation?

25 A. That's right. I might spend five

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2 days in a row, but then maybe I'd skip a month
3 before I'd done any more.

4 Q. Okay. How much time do you spend
5 just reading professional literature since your
6 retirement in 1987, on a weekly basis?

7 A. Weekly basis, would be about eight
8 or ten hours, I guess.

9 Q. So that's another --

10 A. Reading is my hobby.

11 Q. So that's another day a week you
12 spend reading?

13 A. Yes. Uh-huh.

14 Q. And those would -- what would you be
15 reading?

16 A. I'd read the journals like the
17 Journal of American Industrial Hygiene
18 Association, the Journal of American
19 Conference --

20 Q. The ones you identified before?

21 A. That's right. We've gone over the
22 same thing.

23 Q. I just want to make sure that --

24 MR. HOLFORD: No. No. He cut it
25 off. He cut it off.

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2 BY MR. RILEY:

3 Q. Now, you told Mr. McElveen about a
4 study you had done of Humble Oil employees,
5 right?

6 A. That's right.

7 Q. And what was the purpose of that
8 study?

9 A. We were talking about the industrial
10 exposure and then whether or not the chemical
11 operations and their work in the refinery had any
12 hazards to shorten the life expectancy or to
13 disable the employees or to find some problem
14 that we hadn't recognized by examining the
15 records.

16 Q. And one of the diseases you looked
17 at in that study was cancer, correct?

18 A. I did.

19 Q. And in particular, respiratory
20 cancer?

21 A. All types of cancer.

22 Q. Did you focus specifically on
23 respiratory cancer?

24 A. No. I just -- I was as anxious to
25 find skin cancer or any other cancer that was

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2 recorded.

3 Q. It's my understanding -- and I have
4 a copy of the paper here, if you'd like me to --

5 A. What publication was that in?

6 Q. Well, this is one from the medical
7 bulletin in 1958.

8 A. Medical bulletin, yeah. Well, that
9 was published by the Standard Oil Company medical
10 department and they published that review.

11 Q. You're are listed here as one of the
12 authors on this?

13 A. That's right. Dr. Baird was and who
14 was the other --

15 Q. And Dr. Benison.

16 A. Benison, he's the epidemiologist.

17 Q. Benison was an epidemiologist?

18 A. Yeah, and M.D.

19 Q. And Baird was -- what -- what his --

20 A. Medical director of Humble Oil and
21 Exxon company.

22 Q. If you were doing a study like this
23 today, would you control for cigarette smoking?

24 A. I didn't have that in mind when I
25 made that study. I think that my finding showed

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2 that the practice we had in the refinery since
3 1918 when we started till the time of about 1954,
4 '55, when we got air conditioning everywhere,
5 you couldn't carry any smoking tobacco or matches
6 inside the refinery and I think that study
7 reflected that. I couldn't understand why we had
8 had such a favorable rate of the gases compared
9 to the community and the office workers until I
10 thought about that factor, therefore, ten hours
11 or -- so, they weren't permitted to smoke.

12 MR. RILEY: All right. I'm going to
13 object and move to strike your answer as
14 nonresponsive.

15 BY MR. RILEY:

16 Q. My question was --

17 A. I did not look for --

18 Q. If you were -- here's my question.

19 If you were going to do a study like this today,
20 would you control for smoking, in other words, to
21 see how much the workers smoked compared to how
22 much the general population smoked?

23 A. I wouldn't -- I hadn't thought about
24 that what I would do today, because with the air
25 conditioning now, the control houses and

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2 elsewhere, they can go and have a smoke -- they
3 can smoke in the refinery, in those control
4 places; but I hadn't thought about what I would
5 have done and how to go about that. I hadn't
6 thought about that.

7 In fact, I have to confess, I was
8 quite worried as to how to explain the fact that
9 people working in the refinery which was supposed
10 to be a potential hazardous environment had such
11 a good rate for -- for cancer, until I wake up in
12 the middle of the night with the understanding of
13 how this could have happened. And so, the facts
14 will stand for themselves.

15 MR. RILEY: All right. I'm going to
16 object and move to strike as nonresponsive.

17 BY MR. RILEY:

18 Q. The paper -- and I'll be happy to
19 show you the paper document -- it doesn't mention
20 smoking at all. And my question to you is: Why
21 smoking wasn't discussed in the paper, wasn't
22 controlled for?

23 A. The paper was already out and ready
24 for publication before I had -- before I had an
25 explanation for what had happened.

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2 Q. Did you do anything to prepare for
3 your deposition today?

4 A. I didn't understand.

5 Q. Did you do anything to get ready to
6 testify today?

7 A. I just merely looked over the
8 subpoena and tried to react to it. That's all.
9 I may have spent three hours.

10 Q. Did Mr. Holford ever tell you how he
11 got your name?

12 A. No, he didn't. I didn't take time.

13 THE WITNESS: It didn't occur to me
14 to find out how you found out about me.

15 BY MR. RILEY:

16 Q. And he didn't tell you?

17 MR. HOLFORD: To his recall, you
18 mean?

19 MR. RILEY: Yeah.

20 A. I don't recall.

21 BY MR. RILEY:

22 Q. Have you identified for us all the
23 documents that you've reviewed in this case?

24 A. In this case, yes.

25 Q. And you've identified for us all the

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2 documents about Sam Allgood in particular that
3 you've reviewed, correct?

4 A. I did.

5 Q. Do you know what chemicals are made
6 out at the Amoco plant that Mr. Allgood worked
7 at?

8 A. I do not know the whole list, no.

9 Q. Do you know some of the chemicals
10 that are made there?

11 A. Some of them are listed on this
12 sheet, yes.

13 Q. Are there others that are made there
14 that are not on that list?

15 A. I do not know.

16 Q. Prior to today, did you know
17 anything about Mr. Allgood's employment before
18 Amoco, before he started working at Amoco?

19 A. No, I did not.

20 Q. Do you know how long Mr. Allgood
21 worked at Amoco?

22 A. No, I do not.

23 Q. You relied -- or you base your
24 testimony at least in part on a letter from Amoco
25 from Mr. Rogers at Amoco to Mr. Holford, correct?

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2 A. That is Exhibit No. 5.

3 Q. Okay. What department at Amoco does
4 Mr. Rogers work in?

5 A. He was laboratory technician.

6 MR. HOLFORD: No. He asked --

7 BY MR. RILEY:

8 Q. No. What department does Mr. Rogers
9 work at at Amoco?

10 A. Oh, Mr. Rodgers? Oh, excuse me. I
11 was thinking about the victim. He must have
12 signed it. Personnel department, I suppose
13 but -- law department, claims division it says up
14 at the top, written on that letterhead, anyway.

15 Q. He's a lawyer, in other words?

16 A. That's what -- he didn't say he was
17 a lawyer. Just law department.

18 Q. Well, I think if you look at the
19 letterhead on the left or --

20 MR. HOLFORD: Yeah.

21 A. Yeah, he was an attorney. Yes.

22 BY MR. RILEY:

23 Q. Okay. And just now is the first
24 time you realized that Mr. Rogers is an attorney?

25 A. Yes.

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2 Q. Okay. Prior to that, you thought he
3 was in the personnel department?

4 A. Well, I thought somebody would have
5 been asking from personnel, had records as what
6 people did, where they worked and how long they
7 worked and all that, because they're generally
8 kept in the personnel department.

9 (Mr. McElveen entered the room.)

10 BY MR. RILEY:

11 Q. Do you know what records Mr. Rogers
12 used to put that list together?

13 A. No, I do not.

14 Q. Do you know what Mr. Holford asked
15 him to do?

16 A. I read here but -- Mr. Holford made
17 a request of him. List --

18 Q. Right.

19 A. -- of the chemicals that Mr. Allgood
20 may or potentially could have been exposed to
21 while working as a lab technician for Amoco
22 Chemical Company. I read it on it, but I'm not
23 familiar with --

24 Q. Okay.

25 A. -- anything else.

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2 Q. Professor, are you aware of any
3 occupational exposures which are believed to be
4 possible causes of laryngeal cancer?

5 A. There are some -- there was some
6 carcinogenic metals that were associated with
7 that. I suppose it was fumes, but I don't recall
8 at this moment. At the time I looked at this
9 list, I looked that up and it -- it's also
10 published here in these pamphlet books. I could
11 look up the ones, but I have to search in here to
12 find out.

13 MR. HOLFORD: Do you want him to do
14 that?

15 BY MR. RILEY:

16 Q. Well, let me ask you this: Other
17 than what may be in the book, can you just
18 identify for me potential causes of laryngeal
19 cancer that workers are exposed in the work
20 place?

21 MR. HOLFORD: And laryngeal, you
22 mean it's larynx cancer or laryngeal cancer. I
23 mean I'm not --

24 MR. RILEY: Didn't I say laryngeal?

25 MR. HOLFORD: You said laryngeal. I

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2 said it's the same as larynx cancer of the
3 larynx.

4 MR. RILEY: Yeah.

5 MR. HOLFORD: Throat.

6 A. Let's see, what page that is.

7 MR. HOLFORD: I will note that this
8 is also beyond his tender and that all he was
9 asked by plaintiffs to do is look at the list
10 provided by Mr. Rogers and make a determination
11 as to those, but I'm not objecting -- I mean, I'm
12 objecting, but I can't instruct the witness.
13 So...

14 A. Well, I'd look it up immediately
15 when I got home.

16 BY MR. RILEY:

17 Q. Doctor --

18 A. Because it was two compounds, but we
19 had nothing to do with them in the petroleum
20 industry.

21 Q. You've just spent a couple moments
22 looking through the book, correct, the TLV book?

23 A. Yeah.

24 Q. Are you unable to respond to my
25 question without looking at the book?

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2 A. No, I don't recall the two -- I
3 remember there were two substances that was
4 listed under that category, but I may not have it
5 here. Maybe in the documentation, but anyway
6 there was two -- and the petroleum industry
7 wasn't handling either one of those two with my
8 passing it up that way. I guess they're not
9 here.

10 Q. Doctor, are you unable to respond to
11 my question without reference to the book?

12 A. I thought you wanted to know the
13 name of the materials that did -- and my answer
14 to your question is: Neither of the materials
15 that I saw with reference at that site were used
16 in the petroleum industry, to my knowledge.

17 Q. So, as far as you know, there are no
18 chemicals used in the petroleum industry that are
19 potential laryngeal carcinogens, right?

20 A. That's true.

21 (Witness confers with counsel.)

22 BY MR. RILEY:

23 Q. Are you familiar with the term
24 "contact carcinogen"?

25 A. Contact carcinogen, yeah. Arsenic

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1 JAMES W. HAMMOND, SR.

2 is an example of that.

3 Q. Arsenic.

4 A. Arsenic is a good example.

5 Q. What does contact carcinogen mean?

6 A. It means that you're probably
7 getting it on contact with your hands or skin or
8 some organ you would have to -- at that site, you
9 would produce cancer.

10 Q. Is benzene a contact carcinogen?

11 A. No, it's not. Only by inhalation of
12 the vapors from benzene, fumes or vapors.

13 Q. Okay. If you rub benzene on your
14 skin, could you get skin cancer where you rubbed
15 it?

16 A. No, but you could easily get a
17 blister.

18 Q. But you wouldn't get skin cancer?

19 A. No, wouldn't get skin cancer. You
20 could get cancer, I remember it from some of the
21 P.N.A.s, coal tar is a good example of that.

22 Q. Are there causes of leukemia other
23 than benzene?

24 A. I'm sure that there are.

25 Q. Radiation, for example?

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2 A. Radioactive material exposures and
3 so forth, bone marrows and organs, yeah.

4 Q. Okay. If a worker was exposed to
5 both benzene and to radiation and developed
6 leukemia, would you be able to opine as to the
7 cause of that person's leukemia?

8 A. That's strictly a medical question.
9 No, I wouldn't be able --

10 Q. That would be outside your area of
11 expertise?

12 A. Outside of my experience of
13 expertise.

14 Q. I wanted to follow-up on something
15 that Mr. McElveen asked you, and I'm just not
16 sure that the record is clear. And if I'm
17 repeating questions, you'll let me know, I'm
18 sure. But you told Mr. McElveen that any
19 exposure above zero to benzene had the potential
20 to cause cancer, correct?

21 A. Correct, there's potential hazards.

22 Q. And then Mr. McElveen asked you
23 whether you believed the same was true for other
24 carcinogens, correct?

25 A. I don't, you know, any come to my

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1 JAMES W. HAMMOND, SR.

2 mind, any substance that would be, but I hadn't
3 looked for that information. It may be that
4 there are other substances that would be in that
5 category.

6 Q. Is that -- you can't think of any
7 others because you know more about benzene than
8 about other substances?

9 A. I don't know about all of the
10 substances as well as I do the benzene, yes.

11 Q. So the substance you're most
12 familiar with is benzene, correct?

13 A. And the substances I've found in the
14 petroleum industry, petroleum chemical industry.

15 Q. So you're not as familiar with other
16 potential -- you're not as familiar with other
17 potential carcinogens as you are with benzene,
18 correct?

19 A. That's true. I don't know of any
20 other that I've had so much association with.
21 That's a matter of my being a pioneer in this
22 field and have been associated with 50 years and
23 there's very little I don't know about benzene.

24 Q. But the same is not true for other
25 potential carcinogens?

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2 A. I couldn't be that smart.

3 Q. I can't hear you, Doctor.

4 A. I couldn't be that smart.

5 Q. Tell me whether you're familiar with
6 any of these journals, Doctor, if you would. The
7 American Journal of Epidemiology, are you
8 familiar with that?

9 A. No, that's out of my field.

10 Q. The British Journal of Industrial
11 Medicine?

12 A. Sometimes I've read that all the
13 time I was active with the petroleum engineering
14 because I found articles that --

15 Q. You've read that from time to time?

16 A. Yes.

17 Q. Is that a journal that you have
18 found to be reliable and authoritative?

19 MR. HOLFORD: Compound question.
20 You are talking about the whole journal not a
21 particular article now?

22 MR. RILEY: The journal generally.

23 MR. HOLFORD: Well, generally.

24 THE WITNESS: Which one of the
25 journals?

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2 MR. HOLFORD: The British Journal of
3 Industrial Medicine.

4 BY MR. RILEY:

5 Q. Doctor, I'll --

6 A. Oh, yeah. I have a good personal
7 friend over there that I corresponded with and
8 read the articles.

9 Q. Is that a journal that you find to
10 be a reputable reliable journal?

11 MR. HOLFORD: Same objection.

12 A. I just read those particular
13 articles that had application in my own field,
14 and I didn't -- I didn't try to judge the journal
15 for the scope of what -- outside of my area of
16 interest.

17 BY MR. RILEY:

18 Q. But you found that the articles in
19 that journal that you reviewed to be generally
20 reliable, correct?

21 MR. HOLFORD: Objection, the
22 Professor did not say that. That's counsel
23 testifying.

24 MR. RILEY: That's why I'm asking
25 him.

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2 A. If I found an article in there that
3 seemed to be controversial, I wrote my friend,
4 talked to my friends that were over there. I was
5 associated with the Secretary of Labor over there
6 for several years and others that were interested
7 in occupational disease control. I correspond
8 with them about those articles and -- and didn't
9 have to take the word. Just the journal is
10 correct all the time. I had these other
11 contacts.

12 BY MR. RILEY:

13 Q. Is that the journal that people in
14 your field generally rely upon?

15 MR. HOLFORD: Same objection. Well,
16 I better repeat it because that was questions
17 ago. You're asking a compound question and that
18 there are multitudes of articles, authors,
19 editorials in the journal.

20 BY MR. RILEY:

21 Q. Doctor, I'm not asking you whether
22 you agree with every word that's ever been
23 published in that journal. All I'm asking you is
24 whether it's something people that in your field
25 generally rely upon?

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2 A. No, they didn't because very few of
3 them read it and ever saw a copy of it.

4 Q. Thank you. What about the Journal
5 of Epidemiology and Community Health, same
6 question?

7 A. I never did read that because I had
8 associates in the School of Public Health I could
9 call upon to help me out on that.

10 Q. How about the Journal of
11 Occupational Medicine?

12 A. Yes, I read -- scanned it, read
13 those articles that have application.

14 Q. So that would be -- that would be a
15 journal that people in your field would generally
16 rely upon?

17 A. No, only the M.D.s would rely upon
18 that generally. But being part of the medical
19 department, I scanned all those things, up to
20 about 30 a month.

21 Q. Was it a reliable journal, as far as
22 you know?

23 A. It has a good reputation.

24 Q. Okay. What about the Journal of
25 Cancer Research?

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2 A. No, I did not read that. I don't
3 know.

4 Q. American Journal of Public Health?

5 A. Sometimes. I was a member of the
6 American Public Health Association for many years
7 and I would receive that journal. I read those
8 articles dealing with occupational health, yes.

9 Q. Was that a reputable journal?

10 A. It was.

11 Q. The Scandinavian Journal of
12 Environmental Health?

13 MR. HOLFORD: Pardon me, Mr. Riley,
14 which one was that, the last one?

15 MR. RILEY: It's the American
16 Journal of Public Health.

17 MR. HOLFORD: Okay.

18 BY MR. RILEY:

19 Q. The Scandinavian Journal of
20 Environmental Health?

21 A. I saw that very seldom. I didn't
22 read it.

23 Q. Is it a reputable journal, as far as
24 you know?

25 A. I didn't have any condonation, but I

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2 didn't read it enough to really know.

3 Q. Okay. What about the Southern
4 Medical Journal?

5 A. No, I did not read that.

6 Q. The American Journal of Industrial
7 Medicine?

8 A. Only the articles dealing generally
9 with -- related to matters in industrial hygiene,
10 but I also looked at all those articles that
11 dealt with occupational disease and make sure
12 that I hadn't overlooked something.

13 Q. Was that generally a reputable
14 journal, as far as you could tell?

15 A. It was.

16 Q. How about the Journal of the
17 American Industrial Hygiene Association?

18 A. Regularly. I still read that every
19 month.

20 Q. And that's a reputable journal?

21 A. It is.

22 Q. The Journal of the National Cancer
23 Institute?

24 A. I don't read that, no.

25 Q. The Archives of Environmental

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2 Health?

3 A. I read that journal.

4 Q. Is that a reputable journal?

5 A. It has a good reputation, yes.

6 Q. Lancet?

7 A. Oh, again, that's a British
8 publication and I just see that -- I don't see it
9 today, but I did read it -- occasionally I saw it
10 during my years of active practice.

11 Q. Is it a reputable journal?

12 A. Yes.

13 Q. What about Epidemiologic Reviews?

14 A. No, I didn't.

15 MR. BIERSTEKER: Easy for you to
16 say.

17 BY MR. RILEY:

18 Q. You're not familiar with that one?

19 A. I didn't read it. I knew it was
20 published, but I never did read it.

21 Q. What about the Annals of the New
22 York Academy of Science?

23 A. Occasionally, particularly when they
24 had articles dealing with petroleum products, I'd
25 read it.

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2 Q. Is that a reputable journal?

3 A. Yes. Good. It is a good journal.

4 (Mr. Cruse left the room.)

5 BY MR. RILEY:

6 Q. Are you familiar with any of the
7 leading textbooks on toxicology?

8 A. Of course, the best one was that
9 series that was put out -- let's see. What was
10 his name? What -- do you have the name of
11 that --

12 Q. Well, here's my question for you.
13 If you had a question that concerned toxicology,
14 what textbook would you go to?

15 A. Oh, I would go to -- there was a
16 list of books about -- like that put out under
17 the membership. I don't remember his name now.

18 Q. You can't think of any at the
19 moment?

20 MR. HOLFORD: I'm sorry, he's --

21 A. I just don't have any -- I can't
22 think of the man's name and yet I know it as well
23 as mine. And I have the copy -- he had a
24 various, some six or seven volumes and one was
25 just on specifically toxicology and I have that

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2 in my bookcase at home and I use it as back up.

3 BY MR. RILEY:

4 Q. Do you know what year that book was
5 published, the one that you have at home?

6 A. Yes. This book was published in the
7 late '80s that I have, that volume. I mean, that
8 edition, late '85 to '90. I don't remember
9 during what year.

10 Q. Is that the only toxicology text you
11 can think of --

12 A. Oh, no.

13 Q. Well, let me finish the question.
14 Is that the only toxicology text that you can
15 think of at the moment?

16 A. No. No. Let's go back, then.
17 Henderson and his partner there in 1920s at Yale,
18 and I have the second volume of that published in
19 about 1944 and there were books published by
20 Warren Cook and they were published by -- oh,
21 just any number of -- one of the best books was
22 published on carcinogen by Bob Eckardt,
23 E-C-K-A-R-D-T, I have. And Horace
24 G-E-R-R-A-R-D-E, Horace Gerrarde. He published
25 an excellent book. Of course, I have a book on

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1 JAMES W. HAMMOND, SR.

2 Hamilton, Alice Hamilton.

3 THE REPORTER: I need you to speak
4 up, please, because it's hard to hear you.

5 THE WITNESS: Hamilton,
6 H-A-M-I-L-T-O-N.

7 MR. HOLFORD: Alice. I had Alex
8 before.

9 BY MR. RILEY:

10 Q. I think that's -- you've just given
11 me five authors, Henderson, Cook, Eckardt,
12 Gerrarde and Hamilton, right?

13 A. Well, that's just a small number of
14 what I have.

15 Q. Okay. Are these the ones you have
16 at home?

17 A. Yeah, I have those at home.

18 Q. Do you happen to know when these
19 were published?

20 A. Well, they go back to 1924 and all
21 the way through, periodically.

22 Q. Okay.

23 A. Brownie, Ethel Brownie, you put her
24 down. No one will forget her. She's a good
25 British toxicologist and doctor. And that one

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2 came out about 1985, I guess it was, that last
3 edition, Brownie's.

4 Q. Your Henderson textbook you said was
5 published around 1944, right?

6 A. That was the second edition, 1944.

7 Q. What about your textbook by Cook,
8 when was that published?

9 A. Oh, he taught up here at University
10 of Michigan and I guess it was about 1980.

11 Q. 1980. What about Eckardt?

12 A. 1965 to '70.

13 Q. What about Gerrarde?

14 MR. HOLFORD: Pardon me, Mr. Riley,
15 I need to note that two minutes ago we passed
16 four hours by my calculation and we're now on the
17 second 500-dollar-an-hour, and I'm only relating
18 what the Professor told me to tell y'all.

19 MR. RILEY: I don't have much more
20 to go and I'm sure --

21 MR. HOLFORD: You can negotiate
22 that.

23 MR. RILEY: You know, I assume
24 you're not looking for another check at this
25 moment, are you?

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2 MR. HOLFORD: I don't believe that's
3 required.

4 THE WITNESS: No, but I can get up
5 and walk out, so remember that.

6 BY MR. RILEY:

7 Q. Eckardt's text you said was between
8 1965 and 1970, right?

9 A. Yeah.

10 Q. What about Gerrarde's text?

11 A. Well, he wrote just about five years
12 earlier, 1960 to 1965.

13 Q. What about Hamilton's?

14 A. And she's one that goes back to
15 1924.

16 Q. And what about Brownie's?

17 A. Brownie wrote one around '85, the
18 last edition.

19 Q. You mentioned there was one that was
20 published sometime in the late 1980s, but you
21 weren't sure who the author was. Have you now
22 included that on the list of six that you've
23 given me?

24 A. No, I don't recall his name.

25 Q. Okay. So there's a seventh one?

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2 A. It was Industrial Hygiene of
3 Toxicology, and I'm trying to think of his name.
4 It was about a six volume encyclopedia on
5 industrial hygiene.

6 Q. Would you do this for me, would
7 you -- when you get back to your office, would
8 you give that name to Mr. Holford.

9 A. Sure.

10 MR. RILEY: And I assume, Doug,
11 you'll pass that on to us?

12 THE WITNESS: By the time I get in
13 my car, I'll probably be able to tell you. Right
14 now I'm a little tired.

15 MR. HOLFORD: Yes, because I --
16 what?

17 BY MR. RILEY:

18 Q. Is that Patty's?

19 A. Patty. He was General Motors'
20 director of industrial hygiene for years, moved
21 out to Arizona and started writing.

22 Q. Professor, did you ever smoke
23 cigarettes?

24 A. Never smoked. When I was -- let me
25 tell you an interesting story. I'm glad you

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2 asked me that. When I was real --

3 MR. HOLFORD: Well, wait a minute
4 now. They're paying for your time here. Do you
5 want to hear that?

6 MR. McELVEEN: Yeah, I think he can
7 go ahead.

8 THE WITNESS: I'll give it to him
9 free.

10 (Laughter.)

11 MR. HOLFORD: Well, they can't now.

12 MR. RILEY: We'll time this answer.

13 MR. McELVEEN: Go ahead, doctor.

14 A. When I was not over 10 years old my
15 father said to me, "Now, James, don't begin to
16 smoke until you're 35 and -- "because it will
17 take 35 years to disable you or kill you and
18 you'd be 70 and that isn't a bad age to die," you
19 know. And he had gotten hooked on tobacco when
20 he was 45 -- 47 and he died at 83, exactly 35
21 years. He just chewed and used tobacco in that
22 form and he had a heart attack till about 15
23 years after he started, but he lived another 20
24 years and I never did buy a pack of cigarettes in
25 my life.

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2 BY MR. RILEY:

3 Q. That's something your father told
4 you when you were 10, you say?

5 A. Less than 10. More than 70 years
6 ago. Really made an impression on me. But
7 anyway, he chewed so much tobacco and had
8 nicotine coming out of his skin, he'd go in the
9 thickest swamp and the mosquitoes wouldn't bite
10 him.

11 MR. McELVEEN: It is a great
12 insecticide.

13 A. And I just disliked the smell of it
14 so bad I couldn't sit in his lap or anything when
15 I was a child. I would associate that odor with
16 him.

17 MR. RILEY: Let me -- I may be done.
18 I just want to confer for just one second.

19 (Brief recess.)

20 BY MR. RILEY:

21 Q. Let me just clear up one question.
22 I just want to make sure that I understand your
23 testimony and that is that as far as you know,
24 there's no chemical or mineral or substance
25 material of any kind that's used in the petroleum

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2 industry that causes laryngeal cancer; is that
3 your opinion or not?

4 A. I'd have to go back and look at that
5 matter, because I can imagine some tarry
6 materials that might precipitate -- as they
7 breathe, might precipitate in that part of the
8 throat and -- but, I had no such problem. I'll
9 tell you I did not have any such problem in the
10 petroleum industry with that type of cancer.

11 Q. So, in other words, as far as you
12 know, as you sit here today, you're unable to
13 identify for me any chemical or substance of any
14 kind used in the petroleum industry that is a
15 cause of laryngeal cancer?

16 A. I'll have to go back and look again
17 at my list of chemicals that are responsible for
18 laryngeal cancer and see if we generated any in
19 the form of welding or burning that we might have
20 done and -- on pipes or lines and so forth,
21 depending on the materials, it was the
22 composition of alloy that was in the lines that
23 we might have worked on.

24 Q. What list are you going to look at?
25 What list would you look to find that out?

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2 A. I'm going to go back and look for
3 the list that I attempted to find in there, but I
4 didn't find it. But I'll look that up and see.

5 Q. It's a list that's in the TLV
6 handbook?

7 A. Yeah, the TLV handbook.

8 MR. RILEY: Let me just put two
9 other things on the record. I'm going to put on
10 the record that Professor Hammond has produced
11 for us here today two deposition transcripts.
12 The first one is in a case captioned Wilson Simon
13 against Texaco. It's pending in the District
14 Court of Jefferson County, Texas and it's
15 deposition taken May 19th, '93, at the Doubletree
16 Hotel. The second one is caption Albert Armstead
17 and it's pending in the Parrish -- the District
18 Court for the Parrish of C-A-L-C-A-S-I-E-U --

19 MR. HOLFORD: Calcasieu.

20 MR. RILEY: -- Louisiana. And
21 that's a deposition transcript dated October
22 24th, 1989, and I'd also like to mark -- what
23 exhibit are we up to?

24 THE REPORTER: 8. The next one will
25 be 8.

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1 JAMES W. HAMMOND, SR.

2 MR. RILEY: 8 as, if it's okay, just
3 to mark this as a single exhibit all of the
4 materials that were produced here today.

5 MR. BIERSTEKER: The remainder of
6 the material.

7 MR. HOLFORD: I don't care how you
8 mark your exhibits.

9 MR. RILEY: Okay.

10 MR. HOLFORD: But I've listed them
11 for myself, so --

12 THE WITNESS: Are we going to get
13 them back?

14 MR. RILEY: We'll mark these --

15 MR. HOLFORD: Oh, wait a minute.
16 Wait a minute. I'm sorry. You're right. You're
17 right. No. Actually, we can't mark those very
18 ones because, as I said, we need to get those
19 back. If y'all --

20 MR. BIERSTEKER: Yeah. We're going
21 to copy them.

22 MR. RILEY: We'll mark copies and
23 we'll give you the originals back.

24 MR. HOLFORD: Right.

25 MR. BIERSTEKER: Okay.

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1 JAMES W. HAMMOND, SR.

2 MR. RILEY: Okay. And that will be
3 Exhibit 8.

4 MR. HOLFORD: Okay.

5 MR. RILEY: Okay. And Exhibit 8
6 will be copies of the remaining materials that
7 Professor Hamilton has produced here today.

8 MR. HOLFORD: All right.

9 MR. McELVEEN: For the reporter's
10 purposes, why don't we just cover that with a
11 little cover sheet and you can mark the cover
12 sheet with the exhibit tab.

13 (Hammond Exhibit No. 8
14 marked for identification.)

15 (Discussion off the record.)

16 MR. McELVEEN: Is that it?

17 MR. HOLFORD: Yes. Reserve
18 questions for trial.

19 (TIME NOTED: 3:57 p.m.)
20
21
22
23
24
25

1 JAMES W. HAMMOND, SR.

2 STATE OF TEXAS)

3 ss:

4 COUNTY OF HARRIS)

5

6 I, JAMES W. HAMMOND, SR., the
7 witness herein, having read the foregoing
8 testimony of the pages of this deposition do
9 hereby certify it to be a true and correct
10 transcript, subject to the corrections, if any,
11 shown on the attached page.

12

13

14

15

JAMES W. HAMMOND, SR.

16

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18

19
20 Subscribed and sworn to before me

21 this _____ day of _____, 19____

22 _____.

23

24

25

NOON & PRATT

1 JAMES W. HAMMOND, SR.
2 STATE OF TEXAS) Pg____ of____ Pgs
3 SS:
4 COUNTY OF _____)

5 I wish to make the following changes, for
6 the following reasons:

7	PAGE	LINE	
8	_____	_____	CHANGE: _____
9			REASON: _____
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24	_____	_____	CHANGE: _____
25			REASON: _____

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1
2 STATE OF TEXAS
3 COUNTY OF HARRIS
4

5 REPORTER'S CERTIFICATION
6 TO THE DEPOSITION OF JAMES W. HAMMOND, SR.
7 TAKEN ON OCTOBER 13, 1993
8

9 I, Ann M. Plainos, Certified Shorthand
10 Reporter in and for the State of Texas, hereby
11 certify that this deposition transcript is a true
12 record of the testimony given by the witness
13 named herein, after said witness was duly
14 sworn/affirmed by me.

15 I further certify that I am neither attorney
16 nor counsel for, related to, nor employed by any
17 of the parties to the action in which this
18 testimony was taken. Further I am not a relative
19 or employee of any attorney of record in this
20 cause, nor do I have a financial interest in the
21 action.

22 Further certification requirements, if any,
23 pursuant to the Rules will be certified to in the
24 Supplemental Certificate after they have
25 occurred.

26 Subscribed and sworn to on this the 3rd
27 day of November, 1993.

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2 REPORTER'S SUPPLEMENTAL CERTIFICATION
3 I, ANN M. PLAINOS, Certified Shorthand Reporter
4 in and for the State of Texas, hereby certify
pursuant to the Rules and/or agreement of the
parties present to the following:

5 That \$_____ is the charge for the preparation of
6 the completed deposition transcript and any
copies of exhibits, charged to_____,
TBA#_____.

7 _____ That notification of the submission of the
8 deposition transcript was given to the witness on
_____, that same was to be examined and
9 signed within 20 days of said date and returned
to A & A Court Reporters, Inc. by_____.
10 The attached Change/Correction Sheet contains
changes, if any, made by the witness and the
reasons therefor, made by the witness.

11 _____ That the deposition transcript was not
12 submitted to the witness for examination and
signature, examination and signature having been
waived by the witness and all parties present.

13
14 That the deposition transcript was____ was not____
returned to the deposition officer by the
15 witness.

16 That the original or a certified copy of the
17 deposition transcript, together with copies of
all tendered exhibits, was delivered to
_____ on_____.

18 That a copy of this certificate was served on all
19 parties shown herein, pursuant to information
made a part of the record at the time said
20 testimony was taken, pursuant to TRCP 21a.
Subscribed and sworn to on this the 3rd day of
November, 1993.

21
22 Ann M. Plainos, CSR
ANN M. PLAINOS, CSR
23 Certified Shorthand Reporter
in and for the State of Texas

24 Notary Expires: 1/10/96
Certificate No. 4747
25 Expiration Date: 12/31/93

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JAMES W. HAMMOND, SR.

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EXAMINATION CONDUCTED:

BY-MR. McELVEEN

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BY-MR. RILEY

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4	of Dr. James W. Hammond, Sr.	
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9	Air Adopted by ACGIH for 1979	
10	Three-page document with one-page	86
11	cover letter dated August 4, 1992,	
12	from James W. Hammond also attached	
13	is a two-page letter dated	
14	June 17, 1991, to Mr. Alden D.	
15	Holford from J. Tracey Rogers	

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WITNESS NAME: JAMES W. HAMMOND, SR.
JOB NUMBER: 93-2413 AMP

CERTIFICATE OF ERRATA

*10/20/93
3 hours E.D. Dr.
Hickory, La.
660 + 600 = 1260*

I, the undersigned, JAMES W. HAMMOND, SR., do hereby certify that I have read the foregoing pages of my testimony and that, to the best of my knowledge, it is a true, complete and accurate transcript, with the exceptions of the following correction(s) as noted below:

The reasons for making changes are as follows:

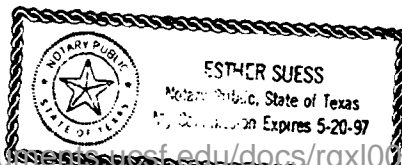
- (3) ~~(1)~~ To clarify the record;
- (2) To conform to the facts;
- (1) ~~(3)~~ To correct major transcription errors;
- (4) Other. (Please list explanation on the back of page.)

Pg - Ln	Change from	Change to	Reason
11 3	"that thesis"	their theses	1
13 6	"points"	plants	1
13 9	"traits"	trace	1
13 10	"pints"	parts	1
13 12	"that"	them	1
16 17	"talked to"	taught	1
16 21	"180"	130	1
16 21	"sat"	taught	1
20 3	"is"	are	1
21 19	"psychological"	physiological	1
25 22	"social"	associate	1

James W. Hammond
SIGNATURE

SWORN TO and SUBSCRIBED before me on this the 16 day of December, 1993.

Esther Sues
NOTARY PUBLIC-STATE OF TEXAS



WITNESS NAME: JAMES W. HAMMOND, SR.

JOB NUMBER: 93-2413 AMP

CERTIFICATE OF ERRATA

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The reasons for making changes are as follows:

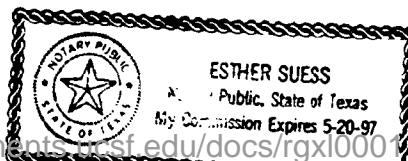
- (3) ~~(X)~~ To clarify the record;
- (2) To conform to the facts;
- (1) ~~(X)~~ To correct major transcription errors;
- (4) Other. (Please list explanation on the back of page.)

Pg - Ln	Change from	Change to	Reason
30 15	"Horner"	Hauter	1
31 25	"much"	such	1
42 5	"They covered in the"	They covered <u>that</u> in the	1
42 17	"each"	teach	1
61 8	"touch"	such	1
74 15	"addition"	edition	1
83 25	"his"	his	1
84 22-24	"to that medical."	to that medical question, <u>But</u> <u>as to what didn't cause it, yes.</u>	3
87 12	"Mr. Rogers handling"	Mr. Allgood handled.	3
114 23	"cancer"	larynx carcinogens	3
131 11	"style"	still	1


SIGNATURE

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NOTARY PUBLIC-STATE OF TEXAS



WITNESS NAME: JAMES W. HAMMOND, SR.
JOB NUMBER: 93-2413 AMP

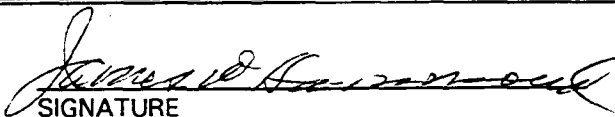
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- (4) Other. (Please list explanation on the back of page.)

Pg - Ln	Change from	Change to	Reason
143 11	"primary organ"	primary organ and	1
143 12	"blooddestroys"	benzene destroys	1
143 17	"collate"	coagulate	1
147 2	"benzene"	toluene	1
157 8	"knocking"	reducing	1
172 9	"other than the scaly poena"	other than <u>about</u> the scaly poena	1
175 21	"saeing"	rate	1
198 9	"the word"	<u>their</u> word	1
198 10	"correct"	<u>not</u> correct	1
200 25	"condouction"	contradiction condemnation <i>Int</i>	1


SIGNATURE

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